

INDEX

COPEIA, 2001, Nos. 1-4

NEW NAMES

- Apogon*
indicus 459-472
marquesensis 459-472
susanae 459-472
Apostolepis breviceps 501-507
Bedotia masoala 482-489
Bolitoglossa anthracina 700-704
Bufo chavin 216-223
Chromis
abrupta 92-107
fatuhivae 92-107
flavapicis 92-107
Chromogobius britoi 1073-1080
Eptatretus wayuu 1025-1033
Eustomias
albibulbus 685, 687, 697
bulbiramis 684, 686, 692-693, 697
cryptobulbus 685-686, 693-694, 697-698
danae 684, 686-688, 698
elongatus 684, 686, 691, 697-698
flagellifer 684, 686, 693, 697
longiramis 684, 686-687, 691
magnificus 684, 686, 690
parini 684, 686, 688, 697-698
paxtoni 684, 686, 689, 697-698
problematicus 685, 687, 696
vulgaris 684-685, 687, 697-698
Gerres
silaceus 164-168
phaiya 1043-1049
Harttia longipinna 137-141
Jenynsia weitzmani 726-736
Lebias stiassnyae 150-153
Lepadichthys springeri 499-500
Lycodes paamiuti 972-996
Moenkhausia diktyota 1058-1063
Poecilopsetta dorsalis 1081-1086
Polydactylus longipes 1087-1092
Phoxinus saylori 118-128
Platymantis browni 194-201
Proceratophrys brauni 203-215
Quadratus ancon 1026-1033
Stegastes robertsoni 92-107
Tomicodon reitzi 745-746

NEW AND ESTABLISHED NAMES

- Aboma* 1078
Abudefduf 591-601
saxatilis 595-596, 600
sexfasciatus 595-596, 600
sordidus 106
zonatus 106
Acacia 883
Acanthochromis 597
Acanthopterygii 48, 537-539
Acanthopagrus australis 49
Acanthuridae 50
Acanthurus
chirurgus 51, 885
trigostegus 874
Acer monspessulanum 179
Acestridium martini 1058-1063
Acipenser
brevirostrum 519
oxyrinchus desotoi 1190
Acipenseriformes 537-538, 540
Acrantophis 1151-1154
dumerili 1151
madagascariensis 1151-1153
Acris crepitans 292, 1147, 1149
Actinopterygii 46, 539-540, 638-645
Adelphicus quadravirgatus 582
Aeromonas
hydrophila 950-951
veronii biovar. *veronii* 950
Aethiostacembelus ellipsifer 568
Agkistrodon 1159-1160
contortrix 1039
piscivorus 474, 607, 609
Albula 35-51, 378
vulpes 36, 40, 42
Albulidae 46
Alburnops 638-645
Alepisauroides 556
Alestes 38
lateralis 47
Alfaro cultratus 727, 732, 736
Alligator mississippiensis 679
Alophorus robustus 49
Alticorpus 705, 715
Altrichthys 597
Alytes 170, 174
cisternasii 1149
obstetricans 169-177, 1149
Amblycirrhitus
indicus 870-871
pinos 870-871
Amblyglyphidodon 591-601
Amblyraja radiata 1187
Ambystoma
macrodictylum 952
opacum 1017-1025, 1155
talpoideum 143-149, 1017-1025
tigrinum 146
Ambystomatidae 1017-1025
Ameiurus
natalis 714
nebulosus 714

INDEX

COPEIA, 2001, Nos. 1-4

NEW NAMES

- Apogon*
indicus 459-472
marquesensis 459-472
susanae 459-472
Apostolepis breviceps 501-507
Bedotia masoala 482-489
Bolitoglossa anthracina 700-704
Bufo chavin 216-223
Chromis
abrupta 92-107
fatuhivae 92-107
flavapicis 92-107
Chromogobius britoi 1073-1080
Eptatretus wayuu 1025-1033
Eustomias
albibulbus 685, 687, 697
bulbiramis 684, 686, 692-693, 697
cryptobulbus 685-686, 693-694, 697-698
danae 684, 686-688, 698
elongatus 684, 686, 691, 697-698
flagellifer 684, 686, 693, 697
longiramis 684, 686-687, 691
magnificus 684, 686, 690
parini 684, 686, 688, 697-698
paxtoni 684, 686, 689, 697-698
problematicus 685, 687, 696
vulgaris 684-685, 687, 697-698
Gerres
silaceus 164-168
phaiya 1043-1049
Harttia longipinna 137-141
Jenynsia weitzmani 726-736
Lebias stiassnyae 150-153
Lepadichthys springeri 499-500
Lycodes paamiuti 972-996
Moenkhausia diktyota 1058-1063
Poecilopsetta dorsalis 1081-1086
Polydactylus longipes 1087-1092
Phoxinus saylori 118-128
Platymantis browni 194-201
Proceratophrys brauni 203-215
Quadratus ancon 1026-1033
Stegastes robertsoni 92-107
Tomicodon reitzi 745-746

NEW AND ESTABLISHED NAMES

- Aboma* 1078
Abudefduf 591-601
saxatilis 595-596, 600
sexfasciatus 595-596, 600
sordidus 106
zonatus 106
Acacia 883
Acanthochromis 597
Acanthopterygii 48, 537-539
Acanthopagrus australis 49
Acanthuridae 50
Acanthurus
chirurgus 51, 885
trigostegus 874
Acer monspessulanum 179
Acestridium martini 1058-1063
Acipenser
brevirostrum 519
oxyrinchus desotoi 1190
Acipenseriformes 537-538, 540
Acrantophis 1151-1154
dumerili 1151
madagascariensis 1151-1153
Acris crepitans 292, 1147, 1149
Actinopterygii 46, 539-540, 638-645
Adelphicos quadravirgatus 582
Aeromonas
hydrophila 950-951
veronii biovar. *veronii* 950
Aethiostacembelus ellipsifer 568
Agkistrodon 1159-1160
contortrix 1039
piscivorus 474, 607, 609
Albula 35-51, 378
vulpes 36, 40, 42
Albulidae 46
Alburnops 638-645
Alepisauroides 556
Alestes 38
lateralis 47
Alfaro cultratus 727, 732, 736
Alligator mississippiensis 679
Alophorus robustus 49
Alticorpus 705, 715
Altrichthys 597
Alytes 170, 174
cisternasii 1149
obstetricans 169-177, 1149
Amblycirrhitus
indicus 870-871
pinos 870-871
Amblyglyphidodon 591-601
Amblyraja radiata 1187
Ambystoma
macrodictylum 952
opacum 1017-1025, 1155
talpoideum 143-149, 1017-1025
tigrinum 146
Ambystomatidae 1017-1025
Ameiurus
natalis 714
nebulosus 714

- Ameiva ameiva* 407
Amia 36
 calva 36, 47
 fusca 459
Amiidae 46
Amiiformes 46, 537, 540
Amphibia 52-64, 561-562, 1177
Amphiesma doriae 535
Amphiprion 591-601
 (*Amphiprion*) 597
 akindynos 591
 chrysopterus
 clarkii 595-597, 599
 frenatus 577, 594-597, 599
 melanopus 591
 ocellaris 593-597, 599
 (*Paramphiprion*) 597
 percula 591, 595-597, 599
 (*Phalerebus*) 597
Amphiprioninae 591-601
Aphitecium 868
Anablepidae 727
Anableps
 anableps 731-732, 736
 dowi 731-732, 736
 microlepis 731-732, 736
Anachantorus 868
Anarhichadidae 50
Anarhichas 1170
Anarhicus 1170
Anarrhichthys ocellatus 51
Anchoietta lyolepis 885
Andrias davidianus 1102
Aneides 292
Anilius 534
 scytale 533-534
Anisotremus virginicus 885
Anguidae 490
Anguilla 36, 41, 537
 anguilla 47, 848
 japonica 848
 rostrata 47, 848-853
 sp. 539
Anguillicola crassus 848-853
Anguillidae 46
Anguilliformes 36, 46
Anguis 490
Annelida 1035, 1037
Anolis 185, 490, 496, 1190
 biporcatus 274, 1178
 bourgeaei 274-275
 carolinensis 490-498, 966
 chrysolepis 401
 copei 274, 1178
 copii 274
 frontatus 274
 fuscoauratus 407
 garmani 162
 lemurinus 274
 l. bourgeaei 274
 lineatopus 490
 nebulosus 187-193
 nitens 401-412
 n. brasiliensis 401-402
 n. chrysolepis 401
 n. nitens 401-412
 n. scypheus 401-412
 n. landai 401-412
 ortonii 407
 palpebrosus 274
 petersii 1178
 rhombifer 274
 ustus veraepacis 274
 veraepacis 275
 vittigerus 274
Anomalepididae 533-534
Antaresia
 childreni 534
 sp. 534
 stimsoni 534
 s. orientalis 534
Antennariidae 48
Antennarius hispidus 49
Anura 216-223, 276-278, 1035, 1037, 1142-1150, 1177
Aphanius 150, 1177
Aplastodiscus perviridis 212
Aplocheilichthys spilarchen 727, 732, 736
Aplodinotus grunniens 49
Apogon
 (*Apogon*) 459-472
 arenatus 459-460
 binotatus 885
 campbelli 459, 461, 469
 cardinalis 459, 461
 caudicinctus 459
 coccineus 459-472
 crassiceps 459-461, 469
 doryssa 459-461
 erythrinus 459-472
 hypselonotus 459, 461, 469
 indicus 459-472
 kominatoensis 459
 marquesensis 459-472
 planifrons 885
 (*Pristicon*) 459
 semiornatus 459-460
 susanae 459-472
 talboti 459
 unicolor 459
 (*Zoramia*) 459
Apogonidae 92
Apostolepis 501-507
 ambiniger 505, 507
 assimilis 507
 breviceps 501, 504-505, 507
 cearensis 507
 dimidiata 507
 dorbignyi 501-507
 flavotorquata 507
 goiasensis 502, 505
 lineata 507
 multicincta 505, 507
 nigrolineata 507
 nigroterminata 507
 phillipsi 507
 quinquelineata 501, 507
 quirogai 507

- rondoni* 501
tenuis 505, 507
vittata 501–507
Arapaima 378–379
Archosauria 897
Ardea herodias 840
Ariosoma balearicum 301
Avotatus willardi 475
Artemesia tridentata wyomingensis 229
Artemia 431
Ascapthus truei 422–429
Aspidites
 melanocephalus 534
 ramsayi 534
Aspidontus taeniatus 875
Aspidoras 1010–1016
 aff. *menezesi* 1015
 aff. *poecilus* 1015
 aff. *rochai* 1015
 albater 1015
 belenos 1015
 brunneus 1015
 carvalhoi 1015
 cf. *pauciradiatus* 1010, 1015
 eurycephalus 1015
 fuscoguttatus 1015
 lakoi 1015
 maculosus 1015
 menezesi 1015
 microgaleus 1013, 1015
 poecilus 1015
 raimundi 1015
 rochai 1015
 spilotus 1015
 taurus 1011–1015
 virgulatus 1015
Astatotilapia 41
 calliptera 705
 elegans 41, 49
Astroblepidae 1014
Astyanax 1062
 bimaculatus 1062
 fasciatus 1062
 leopoldi 1061, 1062
 mexicanus 714
 scabripinnis 866, 1062
Atelopus 276–278
 balios 278
 bomolochos 278
 cruciger 1177–1178
 elegans 278
 eusebianus 278
 famelicus 278
 farci 278
 mindoensis 276–278
 pictiventris 278
 pulcher 278
 simulatus 278
 sonsonensis 278
 sp. 278
 spumarius 278
 subornatus 278
 tricolor 278
 varius 278, 294, 1178
Atheriniformes 36, 48
Atheris 737–739, 742–743
 acuminata 743
 broadleyi 738–743
 ceratophora 738–739, 743
 chlorechis 738–739, 743
 desaixi 738–739, 743
 hispidia 738–739, 743
 nitschei 738–739, 743
 rungweensis 738–739, 743
 squamigera 737–744
 s. *robusta* 740
 subocularis 737–744
 suborbitalis 739
Atractus 505
 elaps 293
Auchenoglanis occidentalis 566–570
Aulonocara 705, 715
Aulopoidei 556
Austrochaperina novaebrittana 200
Awanaus banana 51
Azurina 597

Balistes
 capricornis 51
 polylepis 51
Balistidae 50
Barbus 243–247, 1123–1129
 amphigramma 243–247
 gananensis 1123–1129
 paludinosus 243–247
 serengetiensis 897
 sp. 1124, 1126–1127
 taitensis 243–247
Bathypteroidae 556
Bathypterois
 mediterraneus 556–560
 quadrifilis 556, 560
 viridensis 556
Batrachochytrium 947, 950–952
 dendrobatidis 945–953
Batrachoides 333
Batrachoseps attenuatus 112–113
Batrachuperus 1100–1107
 karlschmidti 1102–1103, 1105
 karlschmidtii 1105
 longdongensis 1102–1105
 pinchoni 1102
 pinchonii 1103–1105
 sp. 1105
 tibetanus 1100–1107
 yenyuanensis 1102–1105
Bavayia 883
Bedotia 482–489
 geayi 482, 488
 longianalis 482, 488
 madagascariensis 482, 488
 marojejy 482–489
 masoala 482–489
 sp. *mananjary* 488
 sp. *manombo* 488
 sp. *ranomafana* 488
 tricolor 482–488
Bedottidae 482–489

- Bedottinae 482
Bellator 439
Belone belone 49
Belonesox belizianus 49
 Belonidae 48, 324–328
Belonion 324–328
 apodion 327, 329–330, 335, 338
 dibranchodon 327, 329–330, 335, 338
Benthabella infans 556, 559
 Beryciformes 36, 48
Betta splendens 966
Bipes sp. 292
Bitis 738
 arietans 270–273, 535
 gabonica 738, 743
 nasicornis 738, 743
 Blennidae 836
 Blennioidei 1190
Boa 1152, 1153
 constrictor 1151–1154
 manditra 1151, 1153
 Boidae 1151
 Boinae 534, 1151
Boleichthys whipplei 805
Bolitoglossa 700–704
 anthracina 700–704
 biseriata 703
 compacta 703
 marmorea 703
 minutula 703
 mulleri 581
 nigrescens 701, 703
 robusta 701, 703
 schizodactyla 703
 Bolyeriidae 535
Boopsetta umbrarum 1081
 Bothidae 50
Bothus robinsi 885
Brachionus plicatilis 431
Brachiopterygii 46
Branchiopterygii 36
Branchiostoma 540
Brevoortia tyrannus 430–442
Bufo 216–223
 acuticeps 1123
 altianalis 1123
 amboroensis 218
 americanus 829–834, 908, 1070
 arborescens 217–218, 222
 boreas 291–292
 bynni 1123
 canorus 951
 chavin 216–223
 cognatus 292
 debilis 292
 echinodes 216
 fissipes 217–218, 223
 gallardoi 218
 ictericus 208
 inca 217–218
 intermedius 1123
 justiniano 218, 222
 leptoscelis 217–218
 longifilis 1123
 marinus 200, 884, 928–935
 mazatlanensis 1036
 nesiotes 217–218, 222
 oxyrhynchus 1123
 periglenes 7, 297
 punctatus 1036–1037
 quechua 216, 218, 223
 rumbolli 218
 rusae 1123
 sp. 1037
 spinulosus 216–223
 valliceps 1070
 veraguensis 216–223
 viridis 1070
 Bufonidae 216–223, 276–278, 1037
Caecilia 52–64
 elongata 52
 intermedia 64
 isthmica 52–64
 leucocephala 52–64
 nigricans 52–64
 palmeri 64
 tentaculata 52, 57, 64
 volcani 52–64, 561–562
Caecomastacembelus albomaculatus 568
Caesalpinia stuckerti 504
Calabaria reinhardtii 535
Calamus bajonado 885
Caledoniscincus 884
 Callichthyidae 48, 1010–1016
Callichthys 1014
 callichthys 866
Callinectes sapidus 851
Callisaurus 311, 1120
 draconoides 319
 texanus 319
Campylobacter 947, 950
Candida humicola 907
Candoia 1152–1153
 bibroni 884
Canis familiaris 1114
 Carangidae 48
Caranx
 lugubris 49
 para 577
Carassius 47
 Carcharinidae 781–786
 Carcharhiniformes 1113
Carcharhinus
 acronotus 1113
 leucas 885
 longimanus 283
 plumbeus 781
Carcharodon carcharias 795
Caretta caretta 240–242, 668, 677–679, 718–725, 808–812
Carpiodes 925
Carraculus caracola 546
Casarea dussumieri 535
Catoptrophorus semipalmatus 840
 Catostomidae 46, 526–530, 1177
Catostomus sp. 47
 Caudata 1017–1025, 1100–1107

- Causus maculatus* 535
Cebidichthys violaceus 49
Celtis occidentalis 417
 Centrarchidae 48
 Cephalochordata 540
Cephaloscyllium ventriosum 1108–1113
Ceratichthys micropogon 585
Ceratichthys micropogon 585–586
Ceratophrys
 bigibbosa 208
 boiei 203, 208, 212
Cerrophis sp. 1037
Cetorhinus maximus 283–284
Chaetodipterus jaber 885
Chaetodipterus
 sp. 553–554
 spinatus 554
Chaetodon 39
 falcula 51
 miliaris 51
 ocellatus 51, 885
 Chaetodontidae 50
Cheilochromis eucilius 712–713
 Cheilodactylidae 50
Cheilodactylus vittatus 51
Chalcides ocellatus 493
 Chamaelonidae 248
Channa
 argus 49
 sp. 49
Channallabes 548
 apus 548–552
 Channidae 48
Chanoides 36–37
 macropoma 47
Chanos 379
 chanos 1170
 Characidae 46, 585, 866–869, 1058–1063
 Characiformes 36, 46, 267–269, 1058–1063
Charina bottae 292
Chasmistes brevirostris 1187
Chelonia mydas 240–241, 668, 677–679, 723, 808
Chelydrea serpentina 129–135, 521–525, 679, 722, 1050–1057
 Chilopoda 554
Chirocentrus 537
 sp. 539
Chirolepis 1078
Chironius 293
 carinatus 294
 exoletus 294
 Chironomidae 425, 427
Chitala 373–377
 sp. 373–376
Chlamydoselachus anguineus 280
 Chlorophthalmidae 556–560
 Chlorophthalmoidei 556
Choerodon albigena 724
 Chondrichthyes 537–540, 781–786
 Chondrostei 539–540
 Chrominae 591–601
Chromis 93, 95–96, 591, 597
 abrupta 92–107
 amboinensis 591
 analus 92–107
 atripectoralis 591
 bami 99
 chrysura 99
 cyanea 595, 599
 fatuhivae 92–107
 flavapicis 92–107
 iomelas 595, 599
 leucura 96
 margaritifera 92–107
 pembae 92–107
 sp. 93, 98
 sp. B 93, 99
 sp. F 93, 96
 sp. G 93, 96, 99
 sp. 3 93
 sp. 4 93
 viridis 591
Chromogobius 1073–1080
 britoi 1073–1080
 quadrivittatus 1073, 1078
 sp. 1074
 zebratus 1073, 1078–1079
 z. *levanticus* 1073
 z. *zebratus* 1073
Chrysemys picta 633
Chrysipera 599
 rollandi 591
Cichlasoma
 minckleyi 49
 sp. 1037
 Cichlidae 48, 592, 600, 705–717, 1037, 1190
Cirrhitus fasciatus 870–871
Cirrhitus cinctus 870
Cirrhitichthys 870
 oxycephalus 870
Clarias 548–552
 albopunctatus 548, 551
 anguillaris 548–551
 buettikoferi 549–551
 (*Clarioides*) 551
 ebriensis 548–551
 garipepinus 548–550
 longifilis 548
 Clariidae 548–552
 Claroteidae 548–552
Clarotes laticeps 548–552
Clemmys
 guttata 288
 insculpta 288
 Clinidae 836
Clinocottus analis 835–841
Clinostomus elongatus 47
 Clupeidae 430–442
 Clupeiformes 46, 335
 Clupeoidea 379
 Clupeomorpha 36, 46, 538
Cnemidophorus 264–265, 292, 553–554, 747–765
 cozumela 264
 exsangui 749, 760
 gularis 262–266, 747–765
 g. *gularis* 760
 g. *scalaris* 747, 753, 756–760, 765
 g. *semiannulatus* 760

- g. septemvittatus* 747–765
inornatus 749, 759, 760
laredoensis 262–266
maslini 264, 290
neomexicanus 262–266
scalaris 747–765
s. pallidus 760
s. septemvittatus 748
septemvittatus 747–765
s. septemvittatus 748
sexlineatus 262–266, 749, 753
sp. 747, 1117
tesselatus 262–266, 749, 760
tigris 749, 753, 760
uniparens 262–266, 749, 760
velox 262–266
Cobitidae 46
Cobitis bixiae 47
Coluber infernalis 585
Colubridae 293, 501–507, 535
Comamonas acidovorans 950
Copeotyphlinus 52
Cophosaurus 311, 319, 1120
Corallus
canina 534
enydris 533, 535
hortulanus 504, 534–535
Coregonus 396
Corydoras 1015
aeneus 49
arcuatus 49
Cottidae 897
Cottus 897
bairdi bairdi 898
caeruleomentum 898
cf. bairdi bairdi 898
girardi 898
Crenicichla 595–596
lepidota 600
Crinia insignifera 1156
Crocodylia 248
Crotalus
atrox 579
enyo 553–555
exsul 579, 585
horridus 609
lepidus 554
mitchelli 1159
molossus 475
pricei 475
ruber 579, 585
scutulatus 554, 760
tigris 475
lortugensis 579
viridis 229, 233, 291, 370, 475
v. calignus 229
v. concolor 229–234
v. lutosus 229, 232, 1117
v. nuntius 229
v. oreganus 229, 232
v. viridis 229, 232
willardi 473–481, 554
w. amabilis 473
w. meridionalis 473
w. obscurus 473–481
w. silus 473, 477
w. willardi 473–481
Crotaphytus
collaris 185
fasciatus 585
fasciolatus 585
vestigium 585
wislizenii 585
Cryptosophis 52
Ctenochaetus *sp.* 51
Ctenoluciidae 48
Ctenolucius 38
sp. 49
Ctenotus
decaneurus yampiensis 1178
yampiensis 1178
Curimata 267–269
Curimatella 267–268
Curimatidae 267–269
Cycleptus 899–906
elongatus 899–906
meridionalis 899–906
Cyclosquamata 537–539
Cynodon 585
gibbus 585
Cynodontidae 585
Cynodontinae 585
Cynops 997–1009
chenggongensis 104
cyanurus 997–1009
ensicauda 997, 999, 1001, 1003, 1005
orientalis 999, 1001, 1003–1005
orphyus 999, 1001, 1003–1005
pyrrhogaster 997–1009
walterstorffi 997, 999, 1001, 1003, 1005
Cynoscion
macdonaldi 874
regalis 854–859
Cyphocharax 267–269
gillii 268
platanus 268
saladensis 268
sanctacatarinae 267–269
spilotus 268
vari 267–269
voga 267–269
Cyprinella
camura 916–927
venusta 921–922
Cyprinidae 46, 243–247, 586, 638–645, 897, 1123–1129
Cypriniformes 36, 46, 526–530, 585, 714, 1177
Cyprinodon 152
diabolis 224–228
elegans 1188
simus 152
variegatus 49
Cyprinodontidae 48, 1177
Cyprinodontiformes 65, 150–153, 726–736, 823–828, 1177
Cyprinus carpio 47, 549, 1165
Daboia russelii 270

- Dactyla biporcata* 1178
Daector quadrizonatus 334
Dallia 860–865
 admirabilis 860
 delicatissima 860
 pectoralis 860–865
Danakilia franchetti 150, 152–153
Danio 41
 rerio 47, 1163, 1190
Dascyllus 591–601
 aruanus 595–596, 598–599
 melanurus 593–596, 598–599
 reticulatus 593–596, 599
 strasburgi 106
Dasyatidae 615–627
Dasyatis 615–627
 americana 615–627
 brevis 615–627
 centroua 615–627
 geijskesi 615–627
 guttata 615–627
 hawaiiensis 622
 kuhlii 615–627
 lata 615–627
 longus 615–627
 margaritella 615–627
 pastinaca 615–627
 (*Pteroplatytrygon*) 615
 sabina 615–627
 say 615–627
 sciera 622
 sephen 615–627
 tortonesi 623
 varidens 622
 violacea 615–627
 zugei 615–627
Deltistes luxatus 1187
Dendrelaphis punctulatus 535
Dendrobates
 auratus 951
 azureus 951
Dendrophidion 293
Denticiceps clupeioides 47
Denticipitidae 46
Dermatolepis 886
 inermis 886
Dermochelys coriacea 240, 808
Dermophis 52–64
 balboai 52, 55–56, 64
 clarkii 53
 costaricensis 52–64
 eburatus 52, 64
 glandulosus 52–64
 gracilior 52–64
 mexicanus 52–64
 m. clarkii 52
 m. clarkii 53
 oaxacae 52–64
 occidentalis 52–64
 parviceps 52–64
 septentrionalis 52, 64
Desmognathus 25, 30, 110, 1162
 hubrichti 113
 monticola 113
 ochrophaeus 30, 113
 quadramaculatus 113
Desserobdella picta 907–915
Diadema antillarum 875
Diademichthyinae 499
Didynamipus sjostedtii 743
Dinilysia 532, 534
Diplectrum
 bivittatum 885
 formosum 885
Diplomystus 377
Diplotaxodon 705, 715
Dipodomys 553
 sp. 554
Dipsosaurus 553
 dorsalis 493, 554, 1117
Dipturus laevis 1187
Discotrema 500
 crinophila 500
Doradidae 48
Dormitator latifrons 1037, 1041
Drosophila 1156
 virilis 1019
Drymarchon 294
 corais 294

Echidna 37
 catenata 47
 zebra 47
Echis squamigera 740
Eclectochromis 713
 ornatus 712–713
Eigenmannia virescens 866
Elacatinus evelynae 1190
Elaphe
 dione 607–609
 obsoleta 608–609
Elapidae 535
Elapomorphus 501, 505
Elassoma 514–520
 alabamiae 514
 boehlkei 514–520
 evergladei 514–518
 okatie 514–520
 okefenokee 514
 zonatum 514–516
Electrophoridae 48
Electrophorus electricus 49
Eleotrica 1078
Eleotridae 1037
Eleutherodactylus 542, 576
 cooki 542–547, 576
 coqui 174–175, 543, 546, 1147
 johnstonei 542, 787
 leprus 581
 portoricensis 576
 psephosypharus 581
Elimia clavataeformis 427
Elopidae 46
Elopiformes 36, 46, 379
Elopoidei 379
Elopomorpha 46, 538
Elops 377
 saurus 47

- Embiotoca* 596–596
 jacksoni 600
Embiotocidae 14–24, 592, 600
Enallothecium 868
Enchelycore 37
 nigricans 37, 47
Engraulis mordax 438
Enneacanthini 1190
Enneapterygius atriceps 1190
Ensatina 1102
 eschschoeltzii 113–114
Eopsetta jordani 40, 51
Ephemeroptera 415, 425–426
Epicrates 1151–1154
 cenchria 1151
 c. crassus 1151
 c. maurus 1151
 cenchris 535
Epinephelus 1190
 inermis 886
Eptatretus 1026–1033
 burgeri 1030, 1033
 carribeaus 1026, 1030
 eos 1028–1029
 fritzi 1026, 1030
 grouseri 1026, 1030
 hexatrema 1031, 1033
 longipinnis 1033
 mccoskeri 1026, 1030
 mendozai 1026, 1028–1030
 minor 1026, 1028–1030
 multidens 1026, 1028–1030
 profundus 1031
 sinus 1026, 1030
 uayuu 1026–1033
 wisneri 1026, 1030
Eridiphas 574, 579
Erimystax x-punctata 639–642, 644
Erycinae 535
Erymnochelys 1153
 madagascariensis 1151
Erythrinidae 48
Esocidae 860
Esociformes 36, 46, 537–538, 860
Esox 860, 863–864
 lucius 47, 538
Etheostoma 236, 259
 artesia 806
 beani 236
 blennioides 259, 767, 769–773
 caeruleum 766–774
 clarum 236
 denoncourtii 235–239
 euzonum 767, 769–771
 flabellare 766–767, 769–772
 lynceum 803, 916–927
 moorei 235, 236–237, 239, 294
 (*Nothomotus*) 235, 236–237, 917
 (*Oligocephalus*) 802–807
 olmstedii 254–261
 podostemone 236
 radiosum 805–806
 rubrum 235, 236–237, 239, 916–927
 rufilineatum 235, 236–237, 239
 spectabile 236
 tetrazonum 259
 tippecanoe 235–239
 vitreum 236
 whipplei 802–807, 916–927
 w. artesia 802–807
 w. whipplei 802–807
 zonale 254–261, 766–774, 803
Eulamprus tympanum 647
Eumeces
 laticeps 967
 multivirgatus 291
Eunectes 1151–1154
 murinus 1152
 notaeus 1151
Euphyryne obesus 897
Eupomacentrus nigricans 103
Euproctus asper 114
Eurycea 31, 1162
 bilineata 25–34
 b. bilineata 25
 b. cirrigera 25
 b. rivicola 25
 b. wilderae 25
 cirrigera 25–34
 wilderae 25–34
Eurydactylodes 883
Eustomias 683–699
 achirus 685, 698
 albibilbus 685, 687, 697
 bigelowi 685–687, 689, 693, 698
 binghami 686
 borealis 687
 bulbiramis 684, 686, 692–693, 697
 cf. bigelowi 696
 cf. dendriticus 688
 cf. parvibulbus 688
 cryptobulbus 685–686, 693–694, 697–698
 curtifilis 687
 danae 684, 686–688, 698
 dendriticus 685, 688
 (*Dinematochirus*) 683–699
 elongatus 684, 686, 691, 697–698
 fissibarbis 686
 flagellifer 684, 686, 693, 697
 lipochirus 685
 longiramis 684, 686–687, 691
 macronema 686, 689, 697
 magnificus 684, 686, 690
 parini 684, 686, 688, 697–698
 paucifilis 687
 paxtoni 684, 686, 689, 697–698
 problematicus 685, 687, 696
 satterleei 687, 689
 schmidtii 686, 689
 silvescens 686
 similis 683–699
 sp. 685
 sp. 2 688–689
 sp. 3 689
 sp. 4 691
 sp. 5 688
 triramis 686
 vulgaris 684–685, 687, 697–698

Eutaenia sirtalis tetrataenia 585

Euteleostei 540, 860–865

Evermannichthys 1078

Exiliboa placata 535

Fluviphylax obscurum 727, 732, 736

Fundulidae 48, 823–828

Fundulus

bifax 827

catenatus 827

chrysotus 827

cingulatus 827

diaphanus 49, 827

julisia 827

olivaceus 49

rathbuni 827

sciadicus 827

seminolis 827

similis 39

stellifer 827

zebrinus 827

Gadidae 48

Gadiformes 48

Gadus morhua 49, 438

Galaxiidae 540

Galaxiidae 537–538

Gambelia wislizenii 585

Gambierdiscus toxicus 875

Gambusia 1, 1190

affinis 285

geiseri 1–6

nobilis 1188

Gasterosteus aculeatus 827, 936–944

Gastrophryne olivacea 292

Gekko gekko 248–253

Gekkonidae 248

Geococcyx californianus 1114

Geomyidae 554

Geophis 505

Gerreidae 954–965, 1043–1049

Gerres 164–168, 954–956, 964, 1048

abbreviatus 960, 1048

acinaces 167, 954–965

baconensis 164, 167

britannus 954–965

cheverti 1048

chrysops 164–168

darnleyense 954–965

decacanthus 164–168

equulus 164, 167

erythrouus 164, 167, 960, 1043–1049

gigas 954–965

infasciatus 164

filamentosus 164, 954, 1046

limbatus 954

lineolatus 954–965

longicaudus 954–965

longirostris 954–965, 1043–1049

macracanthus 164

macrosoma 954–965

methueni 164, 167, 954, 1046–1048

oblongus 954–965

oyna 164, 167, 954, 960, 1044, 1046

phaiya 1043–1049

poeti 959, 1043–1049

poiet 955

poieti 167–168, 954–965, 1043–1049

profundus 1048

rappi 1047

rueppellii 954–965

rueppellii 961

setifer 164–168, 954, 1046

silaceus 164–168

singaporensis 1048

Gerridae 164–168

Gibbonsia elegans 836

Gila 389–400

cypha 389–400

elegans 395

robusta 389–400

Gilia bicolor 563

Ginglymostoma cirratum 784

Ginsburgellus 1078

Girella 39

nigricans 51, 835–841

Glossiphoniidae 908

Gnathonemus 378

Gnathopogon coerulescens 47

Gobiesocidae 745–746, 836

Gobiosox rhessodon 836

Gobiidae 50, 92, 1073–1080

Gobioides broussoneti 50

Gobiomorus maculatus 1037

Gobiosoma 1078

macrodon 885

Gobius

depressus 1073

niger 1078

paganellus 1078

Gobulus 1078

Gonorhynchiformes 36

Goodea atripinnis 49

Goodeidae 48

Gordichthys 377

Gramma loreto 885

Gryllus lineaticeps 1069

Gymnarchus 378

Gymneleotris 1078

Gymnocephalus 236

Gymnophiona 52–64, 561–562

Gymnophis

clarkii 53

syntrema 581

Gymnopsis

multiplicata 52–64

oligozona 52, 57

proxima 57

syntrema 52–64

syntremus 52

Gymnothorax 37

funnebris 47

Gymnotiformes 36, 38, 48

Gymnura micrura 615–627

Hafnia akvei 950

Halichoeres 595–596

chrysus 600

- Halophryne diemensis* 724
Haplochromis
 chilotes 713–714
 (*Paralabidochromis*) 713
Harpodon sp. 538
Harttia 136–142
 carvalhoi 136, 140–141
 kronoi 136–137, 140–142
 garavelloi 136, 140–142
 gracilis 136, 140–142
 leiopleura 136, 140–142
 longipinna 137–141
 loricariiformis 136, 140–142
 novalimensis 136, 140–142
 rhombocephala 136–137, 140–142
 surinamensis 136–137
 torrenticola 140–142
Heloderma suspectum 532
 Helodermatidae 532
Helostoma 39
 temmincki 50
 Helostomatidae 50
Hemichromis bimaculatus 39
Hemidactylus
 frenatus 883
 turcius 251
Hemigrammus 1061
 ocellifer 1061
 Hemiramphidae 331
 Hepsetidae 48
Hepsetus 38
 odoe 38, 49
Heterandria 1
 formosa 1–5
 Heterandriini 1
Heterobranchius 548–552
 bidorsalis 548–551
 boulengeri 548–551
 isopterus 548–551
Heterodon platyrhinos 270, 292
 Heteromyidae 554
Heterotis 378–379
 niloticus 47
Himantura 616–622
 gerrardi 615–627
 schmardae 615–627
Hiodon 373–379
 alosoides 47, 373–376
 Hiodontidae 46
 Hiodontiformes 373
Hippoglossus hippoglossus 40, 51
Hippopotamyrus 378
 Hirudinea 1037
Holacanthus
 bermudensis 586
 ciliaris 586
 c. bermudensis 586
Holbrookia 311, 1120
 maculata 319, 760
 Holocentridae 48
Holocentrus ascensionis 49
Holoste 36, 46
Homo sapiens 1192
Hoplias malabaricus 49, 866
Hoplosternum littorale 49
Hybognathus 563–564
 placitus 419, 563–565
Hybopsis 638–645
 amblops 640–644
 winchelli 640–644
Hydrolycus 38
 scomberoides 47
Hyla
 arborea 787
 cinerea 1070
 crucifer 169
 etraccata 1070
 marginata 208, 210
 microcephala 1147
 minuta 212
 pseudopuma 297
 regilla 169, 787–793, 1037, 1130–1137
 versicolor 1070, 1149
 Hylidae 1037
Hylodes meridionalis 208, 210
 Hynobiidae 1100–1107
Hyptelium nigricans 767, 921–922
 Hyperolidae 951
Hyperolius marmoratus 169, 1069
Hyperopisus 378
Hyphessobrycon
 boulengeri 1061
 reticulatus 1061–1062
Hypophthalmichthys nobilis 47
Hypoplectrus 886
 unicolor 886
 Hypopomidae 1062
Hyporhamphus 333
Hypselotriton 997, 1005
Hypsigena 572, 574, 579
 torquata 572
Hypsoblennius gilberti 836
Hypsopops 39, 595–596, 598–599
 rubicundus 594, 598–599
 Ichthyosauria 1178
Ichthyosaurus cornalianus 1178
Ictalurus 925
 punctatus 439, 714, 922
Ictiobus 903, 925
 Iguanidae 248, 554, 897
 Ipnopidae 556
 Ipnopinae 556
Iranocichla hormuzensis 153
 Jenynsia 726–736
 alternimaculata 730–732, 736
 eigenmanni 726–736
 eirmostigma 726–736
 (*Jenynsia*) 726
 lineata 731–733, 736
 maculata 731–733, 736
 multidentata 730–733, 736
 (*Plesiojenynsia*) 726–736
 pygogramma 731–733, 736
 sanctaeatarinae 726, 731–733, 736
 unitaenia 728, 731–733, 736
 weitzmani 726–736

- Juniperus oxycedrus* 179
Kalmia sp. 126
Kassina senegalensis 951
Kentropyx
 altamazonica 504
 calcarata 407
 pelviceps 407
Kinosternon
 baurii 797–801
 b. baurii 797
 subrubrum 798
Kyphosus 39
Kyphosidae 50
Kyphosus sectatrix 51

Labridae 50, 592, 600
Labrisomidae 836
Labroidei 39, 592–593
Labroides 875
 dimidiatus 875
Labrus 41
 longirostris 955
 sp. 51
Lacerta 490
 lepada 532
 viridis 156
 vivipara 156, 185
Lacertidae 154–163, 248, 532
Lacertidae 490
Lacertilia 248–253
Lachnolaimus maximus 51
Lactophrys
 bicaudalis 885
 quadricanus 51
Lamna ditropis 794–796
Lampridiomorpha 537–539
Lampris sp. 538
Lamprologus callipterus 568–569
Lampropeltis getula 1140
Lampropholis delicata 652
Latimeria 36
Latris lineata 438
Lebias 150, 152, 1177
 asquamatus 150, 152
 burdurensis 152
 chantrei 152
 dispar 150–153
 fasciatus 150
 (Kosswigichthys) 152
 mento 152
 splendens 150, 152
 stiassnyae 150–153
 transgrediens 152
Leiopisma 884
Leiostomus xanthurus 39, 430–442
Lepadichthys 499–500
 caritus 499–500
 coccinotaenia 499–500
 ctenion 500
 erythraeus 500
 frenatus 500
 lineatus 500
 minor 500
 sandaracatus 500
 springeri 499–500
Lepidolamprologus cunnington 568–569
Lepidochelys
 kempii 240–241
 olivacea 808
Lepidodactylus lugubris 883
Lepidomeda vittata 813–819
Lepidoptera 23
Lepidozyginae 591–592, 598
Lepidozygus 599
 tapinosoma 592
Lepisosteidae 46
Lepisosteus 36
 tropicus 47
Lepomis
 cyanellus 414
 gibbosus 49
 macrochirus 438
 punctatus 804
Leporinus 38
 obtusidens 38, 47
Leptocottus armatus 857
Leptodactylidae 1037, 1064
Leptodactylus
 chaquensis 1177
 melanonotus 1037
 ocellatus 1177
 typicus 1177
Leptodeira
 polysticta 581
 septentrionalis 581
Leptolepides 377
Leptotyphlopidae 533–534
Leptotyphlops
 dulcis 534
 humilis 533–534
 macrolepis 534
Lerista bougainvillii 444
Lethrinops 705
Leucaena 883
Leucophoxys thula 840
Limnodynastes dumerilli 951
Lineatriton 574
Liochlorophis vernalis 292
Liopropoma rubre 886
Lioscincus 884
Litoria
 aurea 884
 infrafnata militaria 200
 thesaurensis 200
Liua shihi 1100–1101, 1105–1106
Lobochilotes labiatus 568, 713
Lophiidae 48
Lophiiformes 48
Lophius 49
 piscatorius 49
Loricaria 136
Loricariichthys 136
Loricariidae 48
Loricarioidea 1014
Lota lota 49
Lotidae 48
Loxocemus 534, 1152

- bicolor* 534
Lucania
 goodei 823–828
 parva 827
Lutjanidae 886
Lutjanus
 fulvus 577
 jocu 885
 lemniscatus 577
 synagris 885
Luxilus 643, 657
 chrysocephalus 640–644, 921–922
 cornutus 586
 zonatus 767
Lycodes 972–996
 agulhensis 976
 albolineatus 972–996
 andriashevi 975–976
 atlanticus 976
 brunneofasciatus 975
 concolor 972–996
 frigidus 976–977
 marisalbi 972, 989
 microporus 988
 paamiuti 972–996
 pallidus 972–996
 p. marisalbi 972
 p. pallidus 977, 983
 p. similis 972
 p. var. similis 983
 p. squamiventer 972, 985, 987
 p. var. squamiventer 972, 985
 reticulatus forma *frigida* 983
 sagittarius 976, 987, 989
 similis 984
 sp. 1 977
 squamiventer 972–996
 terraenovae 972–973
 vahlui
 v. forma pallida 983
 v. forma typica 983
Lycozoarces 973
Lycozoarcinae 973
Lygosoma 884
Lythrurus 657

Mabuya nigropunctata 407
Macrohybopsis aestivalis 419
Macropisthodon rudis 535
Madtsiidae 534
Malaclemys terrapin 1050, 1056
Mammalia 554
Marcusenius 378
Marleyella 1081
Marmorosphax 884
Masticophis taeniatus 474
Masticophis taeniatus girardi 760
Mastigodryas 293
 boddaerti 293
Mecaenichthys 591–601
 immaculatus 597, 599
Megalopidae 46
Megalops atlanticus 47, 885
Meiacanthus grammistes 577

Melaluca sp. 883
Melanochromis labrosus 712–713
Melanogrammus aeglefinus 438
Melanophidium wynandense 534
Melanotaenia
 maccullochi 488
 nigrans 488
 rubrostriata 488
 salata 488
 sp. 488
 trifasciata 488
Merlucciidae 48
Merluccius productus 49
Microcaecilia 58
Micrometrus minimus 14–24
Micropterus salmoides 413–421, 438
Microspathodon 39, 595–596, 598–599
 chrysurus 39, 599, 885
Microsternarchus fimbriipinnis 1058–1063
Micrurus
 hippocrepsis 581
 surinamensis nattereri 293
Minascaecilia sartoria 52, 63–64
Misgurnus
 anguillicaudatus 47
 fossilis 714
Mixophyes fasciolatus 951
Mixosaurus cornalianus 1178
Moenkhausia 1058–1063
 colinho 1062
 diktyota 1058–1063
 oligolepis 1058–1063
 pyrophthalma 1058–1063
 sanctaeofilomenae 1058–1063
Molgula 540
Morelia
 amethystina 534
 antiqua 534
 riversleighensis 534
 spilota 534
Mormyridae 379
Morone saxatilis 438, 1170
Moxostoma
 ariomnum 714
 robustum 526–530, 1177
 sp. 47
Mugil
 curema 1037
 sp. 51
Mugilidae 50, 1037
Muraenidae 37, 46
Muridae 554
Mustelus canis 280
Mycteroperca
 interstitialis 51
 microlepis 51
Myctophiformes 48, 556
Myctophoidae 556
Myliobatidae 616
Myliobatiformes 615
Mylocheilus caurinus 639–642, 644
Mylopharyngodon piceus 47
Mymarothecium 868
Myoxocephalus scorpius 857

- Myxine* 540
Myxiniiformes 540
Myxocyprinus 903
 asiaticus 902–903

Naevochromis chrysogaster 712
Naja 270
Nanowana 532
 godthelpi 532, 534
 schrenki 532, 534
Narcine entemedor 845
Natator depressus 668–682
Natrix 1159
Negaprion brevirostris 724, 781–786, 1113
Nematogenyidae 1014
Nematops 1081
Neoglyphidodon 591–601
 polyacanthus 594, 600
Neopomacentrus 599
 azysron 591
 bankieri 591
Neopterygii 539–540
Nerodia 1038, 1040, 1159
 clarkii 607–608
 cyclopion 535
 erythrogaster 1039–1040
 fasciata 607–608, 1040
 natrix 535
 piscator 535
 sipidon 288, 602–614, 1040
 valida 1034
Niveoscincus 646–655
 metallicus 2
Nocomis
 leptocephalus 921–922
 micropogon 585–586
Nominostomias 683, 698
Norops
 beckeri 581
 laevis 274–275
 pentaprius 581
 sericeus 274–275
 vittigerus 274
Notemigonus crysoleucas 47
Notopteroidei 373, 379
Notopterus 379
Notothecium 868
Notothecium 868
Notropis 638–645, 656–659, 662
 (*Alburnops*) 643, 656–658, 662–663, 665
 amabilis 656–667
 amoenus 656–667
 ammophilus 638–645
 ariomus 656, 658, 660–663, 665
 atherinoides 656–667
 bairdi 419
 blennioides 640–644
 boops 658, 661–662, 665
 buccatus 638–645
 buccula 419
 candidus 656–667
 chrosomus 658, 661–662, 665
 dorsalis 638–645
 edwardianus 658, 661–663, 665
 girardi 656–658, 661–665
 hubbsi 563
 (*Hydrophlox*) 656, 658, 665
 jemezianus 656–667
 longirostris 638–645, 921–922
 miurus 922
 (*Notropis*) 656–667
 nubilus 658, 661–662, 665
 oxyrhynchus 656–667
 perallidus 656, 660–663, 665
 photogenis 656, 658, 660–665
 potteri 419, 640–644, 658, 661–663, 665
 rafinesquei 638–645
 rubellus 639–644, 656–667
 sabinae 638–645
 scepticus 656, 658, 661–663, 665
 semperasper 656–657
 shumardi 640–644, 656–667
 stilbius 656–667
 suttkusi 656–667
 telescopus 656, 658, 660–663, 665
 texanus 658, 661–662, 665
 topeka 413–421, 657
 volucellus 658, 661–662, 665, 921–922
Noturus
 gyrinus 519
 hildebrandi 916–927
Novumbra 860–865
 hubbsi 860–865

Odatia keithhornei 897
Odocoileus
 virginianus 800
 v. clavium 797–801
Oedipina
 collaris 703
 grandis 703
Ogcocephalidae 48
Ogcocephalus nasutus 49
Oligocottus snyderi 839
Oncorhynchus
 aquabonita 788
 clarki 423, 1097
 kisutch 1187
 mykiss 47, 788, 1097, 1126
 rhodurus 47
 sp. 1131
 tshawytscha 47
Onychomys torridus 1114
Ophidiidae 854–859
Ophidion marginatum 854–859
Opistognathus hongkongiensis 577
Ophurus cuvieri 1151
Opsanus tau 438–439, 857
Oreophryne brachypus 200
Orestias 152
Oryzias medaka 49
Oryziatidae 48
Oscacilia 52–64
 elongata 52–64
 ochrocephala 52–64
 osae 52–64
Osmeridae 46, 537, 540
Osmeriformes 377

- Ostariophysi 46, 267–269, 380, 537–538
 Osteichthyes 585, 1035, 1037, 1177
 Osteoglossidae 46
 Osteoglossiformes 46, 373
 Osteoglossoidae 373, 379
 Osteoglossomorpha 36, 46, 335, 372, 377–380, 538
Osteoglossum 373–379, 537
 bicirrhosum 37, 47, 373–376
 sp. 374, 539
 Ostraciontidae 50
Otopharynx 705–717
 argyrosoma 708
 auromarginatus 708
 brooksi 708
 decorus 708
 heterodon 708, 713
 lithobates 708
 pachycheilus 707–709, 711–715
 ovatus 708
 selenurus 708
 speciosus 708
 tetraspilus 708
 tetrastigma 708
 walteri 708
Otophysi 37, 380
Oxyjulis *californica* 872
Oxyuranus microlepidotus 535
Oxyzygonectes dovii 731, 733, 736

Pachycara 988
 nazca 972–996
Pachydactylus 775
 bibronii 775, 777, 779
 tetensis 777, 779
Pachytroton 997–1009
Pagrus
 auratus 49
 major 438
Paleorhinus 897
Pantodon 378–379
Papryrocranus 379
Parablennius marmoreus 885
Paracanthopterygii 36, 48, 537–539
Paraclinus integripinnis 836
Paramesotriton 997–1009
 caudopunctatus 997–1009
 chinensis 999, 1004–1005
 deloustali 999–1001, 1004–1005, 1007
 fuzhongensis 999, 1004–1005
 guangxiensis 999–1001, 1004–1005, 1007
 hongkongensis 997, 999–1002, 1004–1005, 1007
Paramyxine 1026–1033
 atami 1030
 cheni 1031
 sheni 1030
 springeri 1028–1030, 1032–1033
 wisneri 1026
Parasphyraenops 886
Parasuchus 897
 hislopi 897
Paratrygon 1167
Pareques
 acuminatus 885
 umbrosus 885

Parma 595–599
 oligolepis 600
 Parodontidae 48
Parvicaecilia 58
Pastinachus 615
 Pelobatidae 1037
Pelodytes
 ibericus 1142–1150
 punctatus 1142
 Pelodytidae 1142–1150
Perca 236
 Percidae 50, 235–239, 254–261, 802–807, 916–927
 Perciformes 36, 48, 92–107, 235–239, 586, 591–601,
 954–965, 1043–1049, 1087–1092
Percina 259
 caprodes 236, 766–772
 evides 767, 769–772
 maculata 236
 nasuta 767–772
 pelatata 254–261
 sticogaster 236
 vigil 921–922
 Percoidei 885
 Percopsidae 48
 Percopsiformes 48
Percopsis omiscomaycus 49
Peromyscus 553
 sp. 553
Petrocephalus 378
Petrosaurus 311
 mearnsi 319, 776
 thalassinus 319
Petrosirtes breviceps 577
Phalotris 501, 505
Philautus leucorhinus 1147
Phimophis guianensis 293
Phoxinus 118–128
 cumberlandensis 118–128
 eos 121
 erythrogaster 118–119, 121, 123–127
 neogaeus 118, 124
 oreas 118–128
 saylori 118–128
 sp. cf. *erythrogaster* 119
 sp. cf. *tennesseensis* 119
 tennesseensis 118–128
Phrynidium crucigerum 1177
Phrynosoma 309–323, 1114–1122
 asio 309–323, 1114, 1120
 braconnieri 309–323, 1114, 1120
 cerroense 311
 coronatum 1114, 1120
 cornutum 310, 313–315, 318–319, 323, 1114–1122
 ditmarisi 315
 ditmarsii 309–323, 1114–1122
 douglassi 309–323
 douglasii 1114, 1120
 hernandesii 311–319, 1114–1122
 mcalli 310, 312–319, 322, 1114–1122
 modestum 310, 312–316, 318–319, 322, 1114–1122
 orbiculare 309–323, 1114, 1120
 platyrhinus 292, 310, 312–319, 322, 1114–1122
 solare 310, 312–316, 318–319, 322, 1114, 1119–1120
 taurus 309–323, 1120

- Phrynosomatidae 309–323, 554
Phymaturus somuncurensis 1151
Physalaemus
enesefae 1064–1072
pustulatus 1064
pustulosus 1064, 1147
signifer 1068
Pimelodidae 48
Pimphales 643
notatus 921–922
vigilax 640–644, 921–922
Pisces 972–996
Pituophis
catenifer 474
melanoleucus 270
Placidochromis
henrydaviessae 715
milomo 712, 715
Plagioscion sp. 866
Platybelone 327–328, 330, 332
argatus 325, 327, 329, 338
a. argatus 335
a. platyura 335
Platymantis 194–202
browni 194–201
guppyi 201
macrops 201
macroscelus 201
magnus 194, 202
neckeri 201
nexipus 201
papuensis 194, 200–201
p. schmidti 200
schmidti 194, 200–201
Platyplecturus madurensis 534
Plecoglossus 37
altivelis 47, 538
Plecoptera 415
Plectrogyphidodon 595–596, 598–599
lacrymatus 600
leucozona 106
Plethodon 25, 31, 292
cinereus 288, 1017, 1063
glutinosus 1162
jordani 1162
kentucky 108–117
maculatum 1024
shenandoah 1017
Plesiorygon 1167
Plethodontidae 700–704
Pleurodema guayanae 501
Pleuronectidae 50
Pleuronectiformes 36, 50, 714, 1081–1086
Podarcis 178–186
hispanica 154–163
melisellensis 178–186
muralis 178–186
tiliguerta 185
Podocnemis 1153
expansa 1151
Poecilia 49
bulleri 1037
latipinna 1, 4
reticulata 827
Poecilichthys
artesia 802, 806
whipplei 802
Poeciliidae 1, 4, 48, 65, 1037
Poeciliopsis
elongata 1
monacha 1126
sp. 1037, 1041
Poeciloidea 727
Poecilopsetta 1081, 1085–1086
colorata 1081–1086
dorsalis 1081–1086
hawaiiensis 1081–1086
inermis 1081
maculosa 1081
megalepis 1081–1086
natalensis 1081–1086
plinthus 1081–1086
praelonga 1081–1086
zanzibarensis 1081
Poecilopsettidae 1081–1086
Pogonomyrax 1116
Polychrotidae 162, 185–193, 274–275, 490–498
Polydactylus 1087–1092
kuru 1087
longipes 1087–1092
macrophthalmus 1087, 1089, 1092
nigripinnis 1087, 1090–1092
sexfilis 1087, 1090–1092
sextarius 1087, 1090–1092
Polynemidae 1087–1092
Polyodon spathula 902
Polypteridae 46
Polypteriformes 46, 537–538, 540
Polypterus 36, 41
senegalensis 47
Pomacanthidae 586
Pomacentridae 92–107, 591–601
Pomacentrinae 591–601
Pomacentrus 106, 591–601
brachialis 594–596, 600
eclipticus 107
lividus 103, 106
nigricans 103
vairuli 595–596, 600
Pomatomidae 50
Pomatomus saltatrix 51
Porthidium yucatanicum 581
Potamogeton 259
Potamorhaphis 324–328
eigenmanni 327, 329–330, 335, 338
guanensis 327, 329–330, 335, 338
petersi 327, 329–330, 335, 338
Potamotrygonidae 1168
Potamotrygon 1167
histris 1168
menchacai 1168
motoro 1167
schroedei 1167
signata 1168
Potamorhaphis eigenmanni 338
Premnas 595–596
(Actinicola) 597
biaculeatus 591, 597, 600

- Priochavax ariel* 1058–1063
Prionotus carolinus 857
Prionurus microlepidotus 51
Pristis pectinata 1187
Proatheris 739
 superciliaris 738, 743
Proceratophrys 203, 213
 avelinoid 203–215
 bigibbosa 203–215
 boiei 203, 208
 brauni 203–215
 cristinae 203–215
 palustris 203–204, 209–210, 212–213, 215
Procyon lotor 1050
Profundulus labialis 727, 733
Protacanthopterygii 46, 540
Prunus spinosa 179
Psammophis 270
 aegyptius 272
Pseudacris crucifer 169, 1070, 1147, 1149
Pseudanthias squamipinnis 556
Pseudechis colleti 535
Pseudemys scripta elegans 724
Pseudocirrhites pinos 870
Pseudocurimata 267–268
Pseudodoras niger 49
Pseudohynobius 1100
 flavomaculata 1105
 flavomaculatus 1101, 1106
Pseudomonas fluorescens 950
Pseudonaja textilis 535
Pseudorasbora parva 714
Pseudorhombus duplaciocellatus 51
Pseudotylotus 324–328
 angusticeps 329–330, 335, 338
Pseudotyphlops philippinus 534
Ptelea trifolia 496
Pteroplatytrygon 615
Pterygoplichthys sp. 49
Ptyas mucosus 270
Pycnomma 1078
Pygocentrus 47
Pygopodidae 248
Python
 curtus 1138–1141, 1151
 reticulatus 534, 1151
 sebae 534
Pythonidae 1151
Pythoninae 534, 1151

Quadratus 1026–1033
 ancon 1026–1033
 nelsoni 1031–1032
 taiwani 1031–1032
 yangi 1031–1032
Quercus 417
 pubescens 179

Rana 200, 385–386, 1156
 areolata 382–388
 a. aesopus 382
 a. areolata 382
 a. capito 382
 a. circulosa 382
 a. sevosia 382
 berlandieri 340–342, 344–345, 350, 354
 blairi 8, 340–342, 344–345, 350, 354
 boylli 428
 capito 382–388
 c. aesopus 382–383
 c. captio 382–383
 c. sevosia 382–388
 catesbeiana 342, 952
 chiricahuensis 340, 340–342, 344–345, 350, 354
 clamitans 8, 952
 fisheri 339
 foreeri 1037
 kreffti 200
 muscosa 10, 787–793, 945–953, 1130–1131, 1135–1136
 onca 339–354
 papua 201
 piapiens 10, 11, 339–342, 344–345, 347, 350, 354, 382, 1156
 sevosia 382–388
 sp. 1037
 sphenocephala 7–13
 sylvatica 792, 907–915, 1155
 yavapaiensis 339–354
Ranidae 1037
Ranodon tsinpaensis 1100
Relictus solitarius 563
Reptilia 248–253, 554, 585, 897, 1178
Rhabdophis
 subminiatus 535
 tigrinus 1038
Rhabdosargus sarba 49
Rhacochilus vacca 51
Rhacodactylus 883
Rhadinaea 294
 brevirostris 294
Rhamdia guatemalensis 49
Rhamphochromis 705
Ramphotyphlops
 braminus 884, 1151
 willei 884
Rhaphiodon 585
 vulpinus 585
Rheobatrachus sibilus 7
Rheocles 482, 487
 alaotrensis 488
 lateralis 488
 pellegrini 489
 sikorae 489
 sp. *amboaboa* 489
 wrightae 489
Rhinichthys osculus 563
Rhinobothrium lentiginosum 294
Rhinobatidae 1168
Rhinocheilus lecontei 291
Rhinoderma darwini 297
Rhinophis sanguineus 534
Rhoptropus 775–780
 afer 775–780
 barnardi 775–780
 biporosus 775–780
 boultoni 775–780
 bradfieldi 775–780

- b. benguellensis* 775
b. bradfieldi 775, 777-779
b. diporus 775, 777-779
b. montanus 775
taeniosictus 775
Rineloricaria 136
Rison 1078
Rivulus
 marmoratus 881
 santensis 49
Rodentia 554
Rubus trivialis 496

Saccodon 49
Salminus 38
 maxillosus 49
Salmo
 clarki 259
 trutta 47
Salmonella 947, 950
Salmonidae 46
Salmoniformes 36, 46, 537-538
Salvelinus
 confluentus 1093-1099
 fontinalis 1093-1099
 malma 259
Sanzinia 1151-1154
 madagascariensis 1152-1153
Saprolegnia ferax 907
Sarcopterygii 537-538, 540
Sardinops caerulea 439
Sargus sp. 49
Sauria 187-193, 274-275, 1178
Sauromalus
 ater 292, 579, 897
 obesus 579, 897
Scaphiopus couchii 292, 1036-1037
Scaphirhynchus 802
 platyrhynchus 663
 platyrhynchus 902
 suttkusi 663, 902
Sceloporus 187, 311, 476, 553
 belli 760
 grammicus 319
 jarrovi 476, 966-971, 1120
 licki 579
 merriami 319
 occidentalis 319
 scalaris 652
 sp. 554
 undulatus 1190
 virgatus 476
Schinopsis cornuta 504
Schistocerca emarginata 496
Schizodon 38
 fasciatus 47
Sciaena 430-442
Sciaenidae 48, 854-859
Scincidae 248, 531
Sclerophages 378-379
Scolopendra 476, 553-555
 sp. 554
Scolopendridae 554
Scolopendromorpha 554

Scolopsis lineatus 577
Scomber kleinii 577
Scomberesox 328
 saurus 325, 327, 329, 335, 338
Scomberomorus 1170
Scomberomorus 1170
 maculatus 885
Scombridae 51
Scopelomorpha 48
Scorpaena
 albifimbria 885
 guttata 49
 plumieri 49
Scorpaenichthys marmoratus 839
Scorpaenidae 48
Scorpaeniformes 36, 48
Scyliorhinidae 1108-1113
Scyliorhinus
 canicula 1108-1113
 stellaris 1113
Sebastes helvomaculatus 1126
Selene vomer 885
Semionotiformes 46, 537-538, 540
Semotilus atromaculatus 47, 123
Senna chloroclada 504
Serpentes 473-481, 585, 737-744, 820-822
Serrabrycon magoi 1058-1063
Serranidae 50, 1190
Serranus inciscus 886
Serrasalminae 866-869
Serrasalmus 37, 47, 866
 albus 866
 altispinis 868
 brandtii 866
 elongatus 866
 geryi 868
 gibbus 866
 humeralis 866
 marginatus 866
 pingke 866
 rhombus 866-869
 sanchezi 866
 spilopleura 866
Sibon 293
Sicyopterus 39
 japonicus 51
Siluriformes 36, 38, 48, 548-552, 714, 1010-1016
Simiscincus 884
Sinonatrix trianguligera 535
Siphlophis cervinus 294
Siphonops
 oligozona 63-64
 proximus 64
 simus 52, 64
 syntremus 52
Sistrurus
 catenatus 554, 609
 c. edwardsii 475
 miliarius 554
Solea
 solea 40, 51, 438
 vulgaris 714
Soleidae 50
Sonora semiannulata 291

- Sparidae 48
Sparisoma rubripinne 875
 Sparus
 aurata 556
 britannus 955
 erythrourus 1047
Spea multiplicata 1037
Sphaerodactylus millpunctatus 581
Sphoeroides greeleyi 51
 Sphyaenidae 50
Sphyaena argentea 50
Sphyrna lewini 1113
Spingomonas paucimobilis 950
Squalus acanthias 280, 1186
 Squamata 501–507, 554, 897
Stegastes 93, 104–106, 591–601
 albifasciatus 104–105, 107
 dorsipunicans 592, 594–596, 600
 fuscus 592
 nigricans 92–107
 robertsoni 92–107
 variabilis 594–596, 600
Steindachnerina 267–268
Stenorrhina freminvillei 581
 Stichaeidae 48
Stizostedion 236
 Stomiidae 683–699
Storeria dekayi 292, 602–614
Strombus gigas 875
Strongylura 324–328
 exilis 325, 327, 329–330, 332–335, 338
 fluvialitilis 325, 327, 329–330, 332–335, 338
 hubbsi 325, 327, 329–330, 332–335, 338
 incisa 325, 327, 329–330, 332, 335, 338
 marina 325, 327, 329–330, 332–335, 338
 notata 49, 324–325, 327, 329–330, 332, 334–335, 338, 885
 n. forsythia 335
 scapularis 325, 327–330, 332–335, 338
 senegalensis 324–325, 327–330, 332, 334–335, 338
 timucu 49, 325, 327–330, 332, 334–335, 338
 Symphysanodontidae 886
Symphysanodon 886
 Synodontidae 48
Synodontis intermedius 49
Synodus
 foetens 885
 intermedius 49
 saurus 885
Syrrhophus leprus 581

Taeniophallus 294
 brevirostris 294
 nicagus 294
Taeniura 615
 lymma 615–627
Taricha granulosa 952, 998, 1000, 1007
 Teiidae 248, 554
Teleostei 46, 150–153, 243–247, 254–261, 324–328, 482–489, 536–541, 556–560, 705–717, 726–736, 897, 1043–1049, 1073–1080, 1087–1092, 1190
Teramulus
 kieneri 489
 waterloti 489

Terrapene carolina 581
 Tetraodontidae 50
 Tetraodontiformes 36, 50
Thalassoma
 bifasciatum 1190
Thamnodynastes 293
Thamnophis 511, 1034, 1159
 atratus 1034–1042
 brachystoma 509, 1034
 butleri 509
 couchii 1034–1042
 elegans 365–371, 508–513, 1034
 e. arizonae 508–511
 e. biscutatus 508
 e. elegans 508–513
 e. hueyi 508
 e. nigrescens 508
 e. vascotanneri 508
 hammondii 1034–1042
 melanogaster 1034–1042
 proximus 607–609
 radix 509
 rufipunctatus 1034–1042
 sauritus 1034
 sirtalis 82, 89, 365–371, 508–513, 602–614, 1039, 1138, 1140
 s. concinnus 513
 s. fitchi 513
 s. infernalis 585
 s. parietalis 82–91, 1138
 s. tetrataenia 585
 terrestris 508–513
 validus 1034–1042
 v. celano 1034
 v. isabellae 1034, 1038
 v. thamnophisoides 1034
 v. validus 1035, 1038
 vagrans 508–513
Thermus aquaticus 768
Thomomys 553
 bottae 553
Tilapia mariae 49
Tiliqua 531
 rugosa 185
Tischlingichthys 377
Tomicodon 745
 abuelorum 745–746
 prodomus 745–746
 reitzii 745–746
 zabra 745–746
Torpedo 846
 californica 842–847
 marmorata 845–846
Totoaba macdonaldi 1176
Trachemys
 scripta 1051
 s. elegans 628–637
Trachinotus 40
 carolinus 49
 teraia 49
Trachurus
 japonicus 577
 trachurus 577
Trachyboa gularis 535

- Triakis semifasciata* 1113
Tribolodon hakonensis 47
 Trichomycteridae 1014
 Trichoptera 415
Trimeresurus trigonocephalus 535
Triturus 1000, 1003
 carnifex 998, 1000
 cristatus 1069
 granulosa 998
 vulgaris 998, 1000
Tropidolaemus 535
 canus 535
 melanurus 535
Trygon
 garrapa 1168
 reticulatus 1168
Trygonorrhina 1168
Trypanosoma diemyctyli 907
 Trypterigiidae 1190
Tubifex 1019
Tursiops truncatus 283
Tylops tenuis 821
Tylosurus raphidoma 49
Tylotriton 998, 1000
 italiangensis 998, 1000, 1007
 verrucosus 998, 1000, 1007
 Typhlopidae 533–534, 820–822, 1151
Typhlophis squamosus 533–534
Typhlops 820–822
 angolensis 534
 acutus 533–534
 lumbicalis 1151
 reticulatus 534
 stadelmani 820–822
 tenuis 820–822

Uca pugilator 851
Uma 311, 1120
Umbra 860–865
 krameri 860
 limi 860
 pygmaea 860
 Umbridae 860–865
Ungaliophis panamensis 535
Urobatis jamaicensis 615–627
 Urochordata 540
Urogymnus 615
 Uropeltidae 534
Uropeltis
 brevis 534
 ceylanicus 534
 occellatus 534
Urosaurus 187, 311
Uta 311, 553
 palmeri 319
 stansburiana 319, 554, 776

Vandellia erythrura 1192
Vannaeugobius canariensis 1078
 Varanidae 248, 443–458
Varanus 443–458
 acanthurus 446, 453, 458
 albigularius 444–447, 450–453, 458
 becarrii 458
 bengalensis 446, 451, 453, 458
 brevicauda 444–447, 449–451, 453, 458
 caudolineatus 445–451, 453, 458
 dumerilli 446
 eremius 445–447, 449–451, 453, 458
 exanthematicus 444, 452, 458
 flavescens 445–446, 453, 458
 giganteus 446, 449 453, 458
 gilleni 445–446, 453, 458
 glebopalma 445–446, 453, 458
 gouldii 444–447, 449–453, 458
 griseus 445–446, 453, 458
 indicus 445–446, 453, 458
 keithhornei 458
 komodoensis 446, 448, 451, 453, 458
 mertensi 445–446, 448, 450, 453, 458
 mitchelli 446, 453, 458
 olivaceus 445–447, 450–451, 453, 458
 panoptes 444–446, 452–453, 458
 pilbarensis 446
 prasinus 446, 453, 458
 rosenbergi 445–446, 449, 453, 458
 rudicollis 458
 salvadorii 446, 453
 salvator 445–447, 451, 453, 458
 scalaris 444, 446, 452–453, 458
 semiremex 445–446, 453, 458
 spenceri 445–447, 451, 453, 458
 storri 445–446, 449, 453, 458
 timorensis 446, 453, 458
 tristis 444–447, 449–453, 458
 varius 444, 446, 449, 452–453, 458
Varicorhinus jubae 1123
 Vertebrata 540
Vipera
 aspis 370, 1140
 lebetina 535
 russelli 535
 Viperidae 473–481, 535, 553–555, 737–744

Wonambi naracoortensis 532, 534

Xantusia vigilis 292
Xenentodon 324–325, 328, 329–332
 cancila 327, 329, 335, 338
Xenochrophis piscator 535
Xenodon newwiedii 208
Xenomystus 379
Xenopeltis 534
 unicolor 534
Xenopus 325
 laevis 11, 631, 632, 636, 998
Xiphophorus 65–81, 355–364
 birchmanni 65–81
 continens 69–71, 74, 77–78
 cortezii 65–81, 362
 helleri 65–66, 68–74, 77–78, 362
 maculatus 68
 malinche 65, 69–71, 73–74, 77–78
 milleri 73
 montezumae 65–81
 multilineatus 65–81, 355–356
 nezahualcoyotl 65–81
 nigrensis 65–81, 355–358, 360–362

pygmaeus 65–81, 355–364
variatus 65, 68–71, 74, 77–78
xiphidium 68
Xystaema darleyense 955, 958
Yersinia 947, 951
frederiksenii 950–951

Zanclus cornutus 51
Zebrus zebrus 1078
Zeus faber 538
Zingel 236
Zoarcas 973
Zoarcidae 972–996
Zostera marina 15

SUBJECT INDEX

COPEIA 2001, Nos. 1-4

- ACTIVITY**, *Anolis nitens tandai* (diel cycle) 401-412; *Rana muscosa* (yrly. activ. cycle rel. to mvmnts. btwn. habs.) 787-793; *Clinocottus analis*, *Girella nigricans* (diel chngs. in hab. use in tidepools rel. to temper. & pred. avoid.) 835-841.
- AGE**, *Plethodon kentucki* (rel. to growth & surv.) 108-117; *Anolis nebulosus* (aff. perch height) 187-193; *Caretta caretta* (skeletochron. valid. in wild adult) 240-242; *Crotalus enyo* (chng. in prey types with age) 553-555; *Niveoscincus ocellatus* (geogr. var. in hab. temp. aff. age & size at matur.) 646-655; *Torpedo californica* (longev., age & size at sex. matur., popn. age struct.) 842-847.
- BEHAVIOR**, *Thamnophis sirtalis parietalis* (mvmnts. & mating at spring den dispersal, sex. dimorph.) 82-91; *Alytes obstetricans* (female mate choice rel. to call timing in male duets) 169-177; *Podarcis (melisellensis, muralis)* (thermoreg. in autumn) 178-186; *Anolis nebulosus* (gender, age, reprod. seas., temper. & wet & dry seas. aff. perch height) 187-193; *Platymantis browni* n. sp. (descript., sonograms of calls, calling circumstances) 194-202; *Crotalus viridis concolor* (preg. female mvmnts.) 229-234; *Gekko gekko* (advertisement calls, rel. to light, temp. & reprod. seas.) 248-253; *Etheostoma (zonale, olmstedii)*, *Percina peltata* (aggress. displcmnt. of native sp. by introd. congener) 254-261; *Bitis arietans* (mechanics of defensive hissing in snake) 270-273; *Xiphophorus pygmaeus* (female pref. for lg. males absent, gene basis for male size polymorph. diff. than in other *Xiphophorus* spp.) 355-364; *Thamnophis sirtalis* (abnormal thermoreg. in captive gravid females lowers offspring viabil.) 365-371; *Anolis nitens tandai* (thermoreg.) 401-412; *Anolis carolinensis* (evid. of taste in prey discrim.) 490-498; *Auchenoglanis occidentalis* (nesting & brooding beh., male parental care) 566-570; *Negaprion brevirostris* (natal homing, biennial reprod. cycle, microsats. DNA evid. of mult. patern. of litter) 781-786; *Caretta caretta* (nesting depth & loc. aff. dipteran larval infest. of eggs) 808-812; *Lucania goodei* (male breeding beh.) 823-828; *Cynoscion regalis*, *Ophidion marginatum* (captive *O. marginatum* "chatters" like field recordings of "chatters" attrib. to *C. regalis*) 854-859; *Bufo marinus* (forelimb robustness aids breeding males, evid. for sex. select.) 928-935; *Sceloporus jarrovi* (eff. of testost. implants on male feeding & soc. beh. in presence of receptive & non-recept. females) 966-971; *Amphystoma (opacum, talpoideum)* (juv. response to marked substrates & presence of other juvs. in enclosure) 1017-1025; *Chelydra serpentina* (juv. righting response duration aff. by body temp. & family ident.) 1050-1057; *Physalaemus enesefae* (call var.: indiv., w/soc. situations, w/body mass) 1064-1072; *Phrynosoma (cornutum)* [squirts blood], 5 of 7 spp. not prev. reported to squirt blood) (blood-squirting beh. var. in *P. cornutum*, blood squirting absent in 3 spp.) 1114-1122; *Pelodytes ibericus* (response of calling males to recordings of male calls) 1142-1150.
- BIOGEOGRAPHY**, *Eurycea bislineata* spp. complex (*wilderae*, *cirrigera*) (genet. evid. for valid. of spp. at contact zone) 25-34; *Dermophis* (7 spp.), *Gymnophis* (2 spp.), *Oscacilia* (3 spp.), *Caecilia* (4 spp.) (based on new geol. info.) 52-64; *Phoxinus saylora* n. sp. (hypoth.) 118-128; *Platymantis browni* n. sp. (rel. to geol. of Bismarck Arch. & distrib. of all New Ireland frogs) 194-202; New World Belonidae (13 spp.) (w/phyl. anal., info. on evol. of marine to freshwater hab. shifts) 324-338; *Cycleptus (elongatus, meridionalis, sp.)* (3 allopat. ESUs, electrophor. data, units in diff. river drainages) 899-906; *Sanzinia madagascariensis*, *Acrantophis madagascariensis*, *Boa constrictor* (biogeogr. hypoth. for close rel. btwn. Madagascar & S. Amer. boids) 1151-1154.
- BLOOD**, *Phrynosoma (cornutum)* [squirts blood], 5 of 7 spp. not prev. reported to squirt blood) (blood-squirting beh. var. in *P. cornutum*, blood squirting absent in 3 spp.) 1114-1122.
- CALLS**, *Alytes obstetricans* (female mate choice rel. to call timing in male duets) 169-177; *Platymantis browni* n. sp. (sonograms compar. to sympatric congeners, calling microhab.) 194-202; *Proceratophrys bigibbosa* sp. group (*brauni* n. sp., *bigibbosa*) (descript., sonograms) 203-215; *Gekko gekko* (sonograms of advert. calls, aff. by temp. & light, seas. var. rel. to reprod.) 248-253; *Cynoscion regalis*, *Ophidion marginatum* (captive *O. marginatum* "chatters" like field recordings of "chatters" attrib. to *C. regalis*) 854-859; *Physalaemus enesefae* (descript., oscillogram, sonogram, compare to congeners, indiv. var., correl. w/ body mass) 1064-1072; *Pelodytes ibericus* (response of calling males to recordings of male calls) 1142-1150.
- CANNIBALISM**, *Eleutherodactylus cooki* (most egg mortal. due to cannib. in cave frog) 542-547.
- CHROMOSOMES**, *Novumbra hubbsi* (kar., 2n = 48, NOR sites, C-banding, links sp. to *Dallia pectoralis*) 860-865; *Serrasalmus rhombeus* (2 karyotypes evid. for cryptic spp.) 866-869; *Cycleptus (elongatus, meridionalis, sp.)* (tetraploids, much dupl. gene expression, electrophor. data) 899-906.
- CIRCANNUAL RHYTHMS**, *Cyprinodon diabolis* (in popn. size correl. w/ seas. of hab. water level) 224-228; *Rana muscosa* (mvmnts. btwn. habs. rel. to yrly. activ. cycle) 787-793; *Python curtus* (female reprod. cycle starts but not complete unless male present) 1138-1141.
- COLORATION**, *Phoxinus saylora* n. sp. (distinct. from all congeners) 118-128; *Gerres silaceus* n. sp. (fresh & preserv.) 164-168; *Proceratophrys bigibbosa* sp. group (*brauni* n. sp., *avelinoi*, *bigibbosa*) (in life) 203-215; *Bufo chavini* n. sp. (living & preserv.) 216-223; *'Barbus' amphigramma* & *'Barbus' tailensis* = *'Barbus' paludinosus* (color varies w/ wa-

ter clarity) 243–247; *Apogon (erythrinus, marquesensis)* n. sp., *indicus* n. sp., *susanae* (preserved & live) 459–472; *Bedotia masoala* n. sp. (disting. n. sp.) 482–489; *Apostolepis (breviceps)* n. sp., *vittata* (disting. n. sp.) 501–507; *Bolitoglossa anthracina* n. sp. (live & preserved, diel var.) 700–704; *Otopharynx pachycheilus* n. sp. (living & preserved) 705–717; *Cnemidophorus (gularis septemvittatus, g. scalaris)* (Chihuahuan popns. assigned to subspp. by color. & scutation) 747–765; *Lucania goodei* (male anal fin color polymorph.) 823–828; *Gerres (longirostris, oblongus)* (in life & preserved) 954–965; *Lycodes pallidus* spp. complex (*paamiuti* n. sp. & 4 other spp.) 972–996; *Aspidoras taurus* n. sp. (preserved) 1010–1016; *Gerres phaiya* n. sp. (in life, preserved) 1043–1049; *Moenkhausia (diktyota)* n. sp., *oligolepis, sanctaefilomenae, pyrophthalma* (in life & preserved for n. sp., similar in all these spp.) 1058–1063; *Chromogobius (britoi)* n. sp., *zebratus, quadrivittatus* (in life, disting. spp.) 1073–1080; *Poecilopsetta dorsalis* n. sp. (preserved) 1081–1086; *Polydactylus longipes* n. sp. (in life & preserved) 1087–1092.

COMPETITION, *Alytes obstetricans* (female mate choice rel. to call timing in male duets) 169–177; *Etheostoma (zonale, olmstedii)*, *Percina peltata* (compet. exclusion by aggress., introd. sp. vs native congener) 254–261; *Asaphus truei* (competit. btwn. tdpis. & insect herbivores) 422–429; *Lucania goodei* (male-male aggress. in breeding beh.) 823–828; *Bufo marinus* (forelimb robustness aids breeding males, evid. for sex. select. due to male-male comp.) 928–935; *Ambystoma (opacum, talpoidum)* (juv. response to marked substrates & presence of other juvs. in enclosure, no evid. of interspp. comp.) 1017–1025; *Physalaemus enesefae* (male-male comp. eff. on calling) 1064–1072; *Pedodytes ibericus* (response of calling males to recordings of male calls) 1142–1150.

CONSERVATION, *Rana spenocephala* (diff. in gen. var. in response to environ. stressor, conserv. implics.) 7–13; *Phoxinus phoxinus* n. sp. (very limited distrib., endngd. in TN, cons. recomms.) 118–128; *Cyprinodon diabolis* (popn. depends on maint. hab. water level) 224–228; *Etheostoma (zonale, olmstedii)*, *Percina peltata* (implics. of interbasin transfer of congeners) 254–261; *Rana (onca, yavapaiensis)* (phyl. anal. shows *R. onca* valid, genet. evid., ESU design, conserv. recomms.) 339–354; *Gila (cypha, robusta)* (shape anal. w/ geom. morphometrics, aids spp. ident. for conserv. mngmnt.) 389–400; *Notropis topeka* (stream & watershed charcs. rel. to decline of endngd. sp., mngmnt. implics.) 413–421; *Crotalus (willardi obscurus, w. willardi)* (conserv. recomms. rel. to reprod. info.) 473–481; *Bedotia masoala* n. sp. (primary rainforest park includes part of range) 482–489; *Elassoma (boehlkei, okatie)* (ESUs in each river system, found in many Carolina fishes) 514–520; *Moxostoma robustum* (ESU in each river system, conserv. implics.) 526–530; *Hybognathus placitus* (sex. dimorph. in body shape useful in conserv. mngmnt.) 563–565; *Rana muscosa* (high elev. declining frog, mvmnts. btwn. habs. rel. to environ. variables & yrly. activ.

cycle, conserv. recomms.) 787–793; *Kinosternon baurii* (conflict btwn. conserv. mngmnt. technique for *K. baurii* & endngd. deer) 797–801; *Lepidomeda vittata* (low genet. divers., 3 disjunct popns., conserv. recomms.) 813–819; *Cycleptus (elongatus, meridionalis)*, sp. (3 allopat. ESUs, electrophor. data, more genet. info. needed for conserv. mngmnt.) 899–906; *Etheostoma (rubrum, lynceum, whipplei)*, *Noturus hildebrandi*, *Cyprinella camura* (downstream alterations aff. distant upstream habs., popn. responses) 916–927; *Rana muscosa* (declining popns. rel. to high infect. rates w/ chytrid fungus, conserv. recomms.) 945–953; *Batrachuperus* (the 5 spp. in China) (mtDNA data on lineages, conserv. recomms.) 1100–1107; *Hyla regilla* (introd. pred. fish reduce frog popns., conserv. recomms.) 1130–1137.

DENTITION, Teleost fishes (devel. of replcmt. teeth, charc. distrib., evol. of derived state) 35–51; *Gasterosteus aculeatus* (# & ptn. of teeth:sex. dimorph.), trophic diff. & Atlantic vs. Pacific Basin diff.) 936–944.

DEVELOPMENT, Teleost fishes (devel. of replcmt. teeth, charc. distrib., evol. of derived state) 35–51; *Plethodon kentucki* (growth curves) 108–117; *Cheylethra serpentina* (egg components, egg mass, incub. temp. & genet. effects rel. to hatch. success & hatchg. size) 129–135; *Ambystoma talpoidum* (eff. of body size on facultative pedomorphosis, gender diff.) 143–149; *Brevortia tyrannus*, *Leiostomus xanthurus* (larval devel. of function of swimbladder, spp. diff.) 430–442; *Crotalus enyo* (chng. in prey types from juv. to adult) 553–555; *Bathypetrolis mediterraneus* (hermaphr. gonad devel., morph. & histol., devel. of eggs, seas.) 556–560; *Natator depressus* (egg dev. & hatchg. condit. rel. to egg incub. temp. & hydr.) 668–682; *Bufo americanus* (growth rate manip. & thyroxine admin. used to show loss of plastic. in metamorph. timing late in tdp. life) 829–834; *Thamnophis validus* (ontogen. diet chng., anurans to fishes) 1034–1042.

DIGESTION, *Bedotia masoala* n. sp. (GI tract anat., stom. conts.) 482–489; *Cephaloscyllium ventriosum* (fasting & postfeeding met. rate) 1108–1113.

DISTRIBUTION, *Dermophis* (7 spp.), *Gymnophis* (2 spp.), *Oscacilia* (3 spp.), *Caecilia* (4 spp.) (maps for all spp.) 52–64; *Chromis (abrupta)* n. sp., *fatuhiuae* n. sp., *flavapicis* n. sp.), *Stegastes robertsoni* n. sp. (endemic to Marquesas Isls.) 92–107; *Phoxinus phoxinus* n. sp. (very limited, biogeogr. hypoth., endngd. in TN) 118–128; *Harttia longipinna* n. sp. (n. sp. & all *Harttia* in Brazil) 136–142; *Gerres silaceus* n. sp. (of all *G. setifer* complex spp.) 164–168; *Platymantis brauni* n. sp. (endemic to S. New Ireland, PNG) 194–202; *Proceratophrys bigibbosa* sp. group (*brauni* n. sp., *avelinoi*, *bigibbosa*, *palustris*) (n. sp. & revise distrib. of other 3 spp.) 203–215; *Bufo chavin* n. sp. (of sp. group) 216–223; *Cyprinodon diabolis* (smallest range of any fish) 224–228; New World Belontiidae (13 spp.) 324–338; *Rana (onca, yavapaiensis)* 339–354; *Notropis topeka* (stream & watershed charcs. rel. to red. distrib.

of endnrgd. sp., mngmnt. implics.) 413–421; *Apo-gon* (*erythrinus*, *marquesensis* n. sp., *indicus* n. sp., *susanae*) (descript., map) 459–472; *Bedotia masoala* n. sp. (endemic to one Madagascar river basin) 482–489; *Apostolepis breviceps* n. sp. (very limited) 501–507; *Elassoma* (*boehlkei*, *okatie*) (ESUs in each river system) 514–520; *Eustomias* (subgenus *Dinematichirus*: 12 n. spp., *similis*, cf. *bigelowi*) (of subgenus, maps of some spp.) 683–699; *Cnemidophorus gularis septemvittatus* (new loc. records) 747–765; *Etheostoma* (*w. whipplei*, *w. artesiae*) (map, allopat.) 802–807; *Lepidomeda vittata* (disjunct, declining) 813–819; *Gerres* (*longirostris*, *oblongus*) (notes) 954–965; *Aspidoras taurus* n. sp. (n. sp. incr. known distr. of genus) 1010–1016; *Prionocharax ariel*, *Serrabrycon magoi*, *Microsternarchus fimbri-pinnus*, *Acestridium martini* (extend dist. to Brazil, middle Rio Negro) 1058–1063; *Batrachuperus* (the 5 spp. in China) (of specimen locs. in phyl. anal., mtDNA data) 1100–1107; *Sanzinia madagascariensis*, *Acrantophis madagascariensis*, *Boa constrictor* (close rel. btwn. Madagascar & S. Amer. boids) 1151–1154.

ECOLOGY. *Platymantis browni* n. sp. (notes) 194–202; *Proceratophrys bigibbosa* sp. group (*brauni* n. sp., *avellinoi*, *bigibbosa*, *pulstris*) (notes) 203–215; *Bufo chavini* n. sp. (notes) 216–223; *Etheostoma* (*zonale*, *olmstedii*), *Percina peltata* (substrate choice, introd. sp. aff. native congener) 254–261; *Anolis nitens landai* (microhab. rainfor. leaf litter, activ. cycle, body temp., diet, size sex. dimorph., compared to other subsp.) 401–412; *Notropis topeka* (stream & watershed charcs. rel. to decline of endnrgd. sp., mngmnt. implics.) 413–421; *Ascaphus truei* (algae & insect & tdp. herbivores resource-limited) 422–429; *Apostolepis breviceps* n. sp. (notes, fossorial snake) 501–507; *Eleutherodactylus cooki* (reprod. seas. rel. to slight temp. chngs. in caves) 542–547; *Nerodia sipedon*, *Storeria dekayi*, *Thamnophis sirtalis* (popn. subdiv. pttns. & gene flow, spp. diff. rel. to ecol. diff.) 602–614; *Natator depressus* (egg dev. & hatching, condit. rel. to egg incub. temp. & hydr.) 668–682; *Cnemidophorus* (*gularis septemvittatus*, *g. scalaris*) (notes on ecol. diff. btwn. subsp.) 747–765; *Etheostoma* (5 spp.), *Percina* (3 spp.) (diffs. in larval transport in sympat. spp. correl. w/ life hist. & gene flow diff.) 766–774; *Rana muscosa* (high elev. declining frog, mvmnts. btwn. habs. rel. to environ. variables & yrly. activ. cycle) 787–793; *Etheostoma* (*rubrum*, *lynceum*, *whipplei*), *Noturus hildebrandi*, *Cyprinella camura* (downstream alterations aff. distant upstream habs., popn. responses) 916–927; *Gasterosteus aculeatus* (trophic diff. in tooth # & pttn.) 936–944; *Rana muscosa* (high oral chytrid fungal infect. rates in tdp., ecol. correls., rel. to declining popns.) 945–953; *Batrachuperus* (the 5 spp. in China) (mtDNA derived lineages rel. to ecol. & hab. distrib.) 1100–1107.

EGGS. *Gambusia geiseri* (evid. of matrotrophy) 1–6; *Chelydra serpentina* (egg components, egg mass, incub. temp. & genet. effects rel. to hatching, success & hatching size) 129–135; *Bufo chavini* n. sp.

(descript. clutch size) 216–223; *Varanus* (incub. time, clutch size, egg mass & neonate size rel. to matern. size & phylogeny) 443–458; *Eleutherodactylus cooki* (clutch size, seas., high mortal. due to cannib. despite male parental care, cave frogs) 542–547; *Bathypetrolis mediterraneus* (hermaphr. gonad. devel., dev. of eggs) 556–560; *Natator depressus* (egg dev. & hatching, condit. rel. to egg incub. temp. & hydr.) 668–682; *Etheostoma* (5 spp.), *Percina* (3 spp.) (diffs. in larval transport in sympat. spp. rel. to egg size diff.) 766–774; *Rana muscosa* (hab. & seas. of egg masses) 787–793; *Caretta caretta* (nest factors rel. to dipteran larval infest. of eggs) 808–812; *Chelydra serpentina* (egg size & incub. temp. not aff. juv. righting response duration) 1050–1057; *Python curtus* (vitellogen. & normal ovipos. only w/ male present) 1138–1141.

ENDANGERED SPECIES. *Phoxinus phoxinus* n. sp. (endnrgd. in TN, life hist. info.) 118–128; *Cyprinodon diabolis* (tiny popn. size strongly aff. by hab. water level) 224–228; *Rana* (*onca*, *yavapaiensis*) (phyl. anal. shows *R. onca* valid, conserv. recomms.) 339–354; *Gila cypha* (shape anal. w/ geom. morphomets. aids sp. ident. for conserv. mngmnt.) 389–400; *Notropis topeka* (stream & watershed charcs. rel. to decline of endnrgd. sp., mngmnt. implics.) 413–421; *Crotalus* (*willardi obscurus*, *w. willardi*) (reprod. info. on threatened subsp.) 473–481; *Elassoma* (*boehlkei*, *okatie*) (ESUs in each river system) 514–520; *Moxostoma robustum* (ESU in each river system, mtDNA data) 526–530; *Caretta caretta* (histol. of retina rel. to function, ecol. benefits) 718–725; *Rana muscosa* (petit. to list as endnrgd., yrly. activ. cycle, mvmnts. btwn. habs.) 787–793; *Kinosternon baurii* (endnrgd. isol. popn. not diff. mtDNA from other popns.) 797–801; *Lepidomeda vittata* (popn. genet., mtDNA & allozyme data, 3 disjunct popns., low gen. var.) 813–819; *Etheostoma rubrum* (Fed. Threatened, endnrgd. in MS, downstream alterations aff. distant upstream habs., popn. responses) 916–927.

EVOLUTION. Teleost fishes (devel. of replcmnt. teeth, charc. distrib., evol. of derived state) 35–51; *Dermophis* (7 spp.), *Gymnopsis* (2 spp.), *Oscacilia* (3 spp.), *Caecilia* (4 spp.) (revise Central Amer. caecilians, evol. notes) 52–64; *Podarcis hispanica* (specializ. of tail muscles for min. damage at autotomy) 154–163; New World Belonidae (13 spp.) (phyl. anal., mtDNA & nuclear DNA data, info. on evol. of marine to freshwater hab. shifts) 324–338; snakes & lizards (intramandib. septum anal. supports snake-anguimorph lizard affin.) 531–535; *Dasyatis* (14 of 35 spp.), *Himantura* (*gerardi*, *schmardae*) (clad. anal. of body shape, lat. line charcs. show evol. pttns.) 615–627; *Otopharynx pachycheilus* n. sp. (independ. evol. of thick lips, probable gustatory funct.) 705–717; *Atheris* (*subocularis*, *squamigera*) (evol. hypoth. for *A. subocularis* sep. from sister sp., *A. squamigera*) 737–744; *Novumbra hubbsi* (karyotype evol. links *N. hubbsi* w/ *Dallia*) 860–865; *Bufo marinus* (evid. for sex. select. in male forelimb robustness) 928–935.

- FECUNDITY**, *Crotalus viridis concolor* (litter size & freq.) 229-234; *Varanus* (incub. time, clutch size, egg mass & neonate size rel. to matern. size & phylogeny) 443-458; *Niveoscincus ocellatus* (geogr. var. in hab. temp. aff. age & size at matur., fecund. consequ.) 646-655; *Torpedo californica* (age & size at matur., longev., fecund.) 842-847.
- FEEDING**, *Osteoglossomorpha* (*Hiodon*, *Chitala*, *Osteoglossum*) (descript. of morph. var. in charc. complex for biting, import. in using the complex in phyl. anal.) 372-381; *Anolis carolinensis* (taste in food pref.) 490-498; *Sceloporus jarrovi* (testost. implants incr. soc. beh. but not reduce feeding beh. in non-breeding seas.) 966-971; *Cephaloscyllium ventriosum* (fasting & postfeeding met. rate) 1108-1113; *Barbus ganensis* (mouth parts polymorph., 2 morphs same sp., 3rd morph. is undescribed sp., mtDNA data) 1123-1129.
- FOOD**, *Phoxinus saylori* n. sp. (notes) 118-128; *Anolis nicens tandai* (stom. contents, prey size rel. to lizard body size) 401-412; *Bedotia masoala* n. sp. (stom. contents, GI tract anat.) 482-489; *Crotalus enyo* (stom. & gut contents) 553-555; *Rana sylvatica* (eff. of nutrit. level on leech-infected tdpl. surv.) 907-915; *Thamnophis validus* (ontogen. diet chng., anurans to fishes) 1034-1042.
- GENETICS**, *Rana spinocephala* (gen. var. in response to environ. stressor) 7-13; *Eurycea bislineata* spp. complex (*wilderae*, *cirrigera*) (genet. evid. for valid. of spp. at contact zone) 25-34; parthenogenetic *Cnemidophorus laredoensis* = *C. gularis* × *C. sexlineatus* (gen. verif. of separate hybrid origins of clonal complexes A & B) 262-266; *Xiphophorus pygmaeus* (gene basis for male size polymorph. diff. than in other *Xiphophorus* spp.) 355-364; *Clarias* (4 of the 32 spp.), *Heterobranchius* (all 4 spp.), *Channallabes apus* (evid. for monophyly of *H.* & paraphyly of *Clarias*) 548-552; *Nerodia sipedon*, *Storeria dekayi*, *Thamnophis sirtalis* (eff. of gen. drift on popn. subdiv. pttns., spp. diffs. rel. to ecol. diffs., allozyme data) 602-614; *Trachemys scripta elegans* (mtDNA gene responses to anoxia) 628-637; *Natator depressus* (gen. effs. on egg dev. & hatching. condit. rel. to egg incub. temp. & hydr.) 668-682; *Lepidomeda vittata* (popn. genet., mtDNA & allozyme data, 3 disjunct popns., low gen. var.) 813-819; *Cycleptus (elongatus, meridionalis, sp.)* (3 allopat. ESUs, 42 electrophor. loci, diffs. in alleles, heterozyg. & dupl. gene expression) 899-906; *Chelydra serpentina* (gen. basis for juv. righting response) 1050-1057; *Salvelinus (confluentus, fontinalis, confluentus × fontinalis, malma)* (interspersed nuclear DNA w/ PCR primers ident. spp. & their hybrids, verify w/ allozymes) 1093-1099.
- GEOGRAPHIC LOCALITIES**
 Adriatic Sea, *Chromogobius zebratus* 1073-1080.
 Alabama, *Rana capito* 382-388; *Notropis (ammophilus, longirostris)* 638-645; *Notropis (atherinoides, candidus, stilbicus)* 656-667; *Etheostoma whipplei artesianae* 802-807; *Cycleptus meridionalis* 899-906.
 Alaska, *Lamna ditropis* 794-796; *Gasterosteus aculeatus* 936-944.
 Andaman Sea, *Gerres oblongus* 954-965; *Gerres erythrouros* 1043-1049.
 Argentina, *Proceratophrys bigibbosa* sp. group (*brauni* n. sp., *avelinoi*, *bigibbosa*, *palustris*) 203-215.
 Arizona, *Phrynosoma cornutum* 309-323, 1114-1122; *Rana (onca, yavapaiensis)* 339-354; *Gila cypha* 389-400; *Crotalus (willardi obscurus, w. willardi)* 473-481; *Thamnophis (e. vagrans, e. arizonae)* 508-513; *Lepidomeda vittata* 813-819; *Sceloporus jarrovi* 966-971; *Phrynosoma (mcalli, platyrhinos, hemandesi)* 1114-1122.
 Arkansas, *Notropis sabiniae* 638-645; *Etheostoma* (5 spp.), *Percina* (3 spp.) 766-774; *Etheostoma (w. whipplei, w. artesianae)* 802-807.
 Atlantic Ocean, *Eustomias cryptobulbus* n. sp. (SE) 683-699; *Amblycirrhitus indicus* = *A. pinos* 870-871; *Lycodes (paamiuti n. sp., pallidus)* (N) 972-996; *Chromogobius (britoi n. sp., zebratus)* (E) 1073-1080.
 Australia, *Niveoscincus ocellatus* (Tas.) 646-655; *Natator depressus* (QLD) 668-682; *Gerres longirostris* (QLD) 954-965.
 Bahamas, *Negaprion brevirostris* 781-786.
 Barents Sea, *Lycodes pallidus* 972-996.
 Belize, *Gymnopsis syntrema* 52-64.
 Bering Sea, *Lycodes concolor* 972-996.
 Bismarck Archipelago, *Platymantis browni* n. sp. (New Ireland) 194-202.
 Black Sea, *Chromogobius quadrivittatus* 1073-1080.
 Bolivia, *Potamorhaphis eigenmanni* 324-338; *Apostolepis breviceps* n. sp. 501-507.
 Brazil, *Harttia longipinna* n. sp. 136-142; *Proceratophrys (avelinoi, bigibbosa)* 203-215; *Curimata vari* = *Cyphocharax santacatarinae* 267-269; *Belonion apodion*, *Pseudotilosturus angusticeps* 324-338; *Anolis nicens tandai* 401-412; *Jenynsia weitzmani* n. sp. (subgenus *Plesiojenynsia*) 726-736; *Serrasalmus rhombus* 866-869; *Aspidoras taurus* n. sp. 1010-1016; *Moenkhausia (diktyota n. sp., oligolepis, sanctaeflorenae, pyrophthalma)*, *Prioccharax ariel*, *Serrabrycon magoi*, *Microsternarchus fimbripinnus*, *Acestridium martini* 1058-1063.
 California, *Micrometrus minimus* 14-24; *Phrynosoma platyrhinos* 309-323, 1114-1122; *Thamnophis (e. elegans, e. terrestris)* 508-513; *Rana muscosa* 787-793, 945-953; *Clinocottus analis*, *Girella nigricans* 835-841; *Torpedo californica* 842-847; *Hyla regilla* 1130-1137.
 Cameroon, *Atheris (subocularis, squamigera)* 737-744.
 Canada, *Thamnophis sirtalis parietalis* (Man.) 82-91; *Thamnophis sirtalis* (Brit. Col.) 365-371; *Ascachopus truei* (Brit. Col.) 422-429; *Thamnophis elegans vagrans* (Brit. Col.) 508-513; *Nerodia sipedon*, *Storeria dekayi*, *Thamnophis sirtalis* (Ont.) 602-614; *Gasterosteus aculeatus* (Brit. Col., Quebec) 936-944; *Lycodes paamiuti* n. sp. (Baffin Bay) 972-996.
 Canary Islands, *Chromogobius britoi* n. sp. 1073-1080.
 Caribbean Sea, *Eptatretus wayuu* n. sp., *Quadratus ancon* n. sp. 1026-1033.
 China, *Gekko gekko* 248-253; *Paramesotriton (guangxiensis, hongkongensis)*, *Pachytriton labiatus*, *Cynops cyanurus* 997-1009; *Batrachuperus* (the 5 spp. in China) 1100-1107.
 Colombia, *Dermophis glandulosus*, *Caecilia (leucoce-*

- phala, nigricans*), *Oscacilia ochrocephala* 52-64; *Tomicodon reitzi* n. sp. 745-746; *Eptatretus wayuu* n. sp., *Quadratus ancon* n. sp. 1026-1033.
- Colorado, *Phrynosoma hernandesi* 309-323; *Gila cypha, robusta* 389-400.
- Congo, *Channallabes apus* 548-552.
- Costa Rica, *Dermophis* (*parviceps, costaricensis, occidentalis, glandulosus, gracilior*), *Gymnopsis multiplicata*, *Oscacilia osae* 52-64.
- Cote d'Ivoire, *Heterobranchius* (*longifilis, isopterus*), *Clarias* (*anguillaris, buettikoferi, ebriensis*) 548-552.
- Croatia, *Podarcis* (*melisellensis, muralis*) 178-186.
- Cyprus, *Caretta caretta* 808-812.
- Davis Strait, *Lycodes paamiuti* n. sp. 972-996.
- Denmark Strait, *Lycodes* (*paamiuti* n. sp., *pallidus*) 972-996.
- Ecuador, *Cecilia nigricans* 52-64; *Atelopus mindoensis* 276-278; *Pseudotylotus angusticeps*, *Strongylura fluvitilis* 324-338.
- El Salvador, *Dermophis mexicanus* 52-64.
- Ethiopia, *Lebias stassynae* n. sp. 150-153; *Barbus gan-anensis* (includes an undescribed sp.) 1123-1129.
- Florida, *Belonion argalus argalus*, *Strongylura timucu* 324-338; *Rana capito* 382-388; *Kinosternon baurii* 797-801; *Lucania goodei* 823-828; *Bufo marinus* 928-935.
- Georgia, *Eurycea wilderae* 25-34; *Rana capito* 382-388; *Moxostoma robustum* 526-530.
- Ghana, *Strongylura senegalensis* 324-338.
- Greenland Sea, *Lycodes* (*paamiuti* n. sp., *squamiventer*) 972-996.
- Guatemala, *Dermophis mexicanus*, *Gymnopsis* (*multiplicata, syntrema*) 52-64; *Strongylura hubbsi* 324-338.
- Hawaii, *Apogon erythrinus* 459-472; *Eustomias* (*vulgaris* n. sp., *parini* n. sp., *magnificus* n. sp., *longiramis* n. sp., *elongatus* n. sp., *bulbiramis* n. sp., *similis, albibulbus* n. sp., *problematicus* n. sp.) 683-699.
- Honduras, *Dermophis mexicanus*, *Gymnopsis multiplicata* 52-64; *Typhlops stadelmani* 820-822.
- Idaho, *Thamnophis elegans vagrans* 508-513.
- Illinois, *Notropis dorsalis* 638-645; *Cycleptus elongatus* 899-906.
- India, *Gerres oblongus* 954-965; *Gerres phaiya* n. sp. 1043-1049.
- Indian Ocean, *Apogon indicus* n. sp. 459-472; *Eustomias* (*paxtoni* n. sp., *cryptobulbus* n.s.p.) 683-699; *Gerres* (*longirostris, oblongus*) 954-965.
- Indonesia, *Gerres* (*longirostris, oblongus*) 954-965; *Gerres erythrorus* 1043-1049.
- Iowa, *Bufo americanus* 829-834.
- Ivory Coast, *Heterobranchius* (*longifilis, isopterus*), *Clarias* (*anguillaris, buettikoferi, ebriensis*) 548-552.
- Japan, *Gerres* (*longirostris, oblongus*) 954-965; *Gerres erythrorus* 1043-1049.
- Johnson Island, *Apogon erythrinus* 459-472.
- Kansas, *Rana areolata* 382-388; *Notropis topeka* 413-421; *Notropis dorsalis* 638-645; *Etheostoma w. whipplei* 802-807.
- Kentucky, *Plethodon kentucki* 108-117; *Etheostoma tippecanoe* 235-239.
- Kenya, *Gerres longirostris* 954-965.
- Lake Malawi, *Otopharynx pachycheilus* n. sp. 705-717.
- Lake Tanganyika, *Auchenoglanis occidentalis* 566-570.
- Louisiana, *Notropis sabiniae* 638-645; *Etheostoma whipplei artesiae* 802-807; *Ambystoma* (*opacum, talpoidum*) 1017-1025.
- Madagascar, *Bedotia masoala* n. sp. 482-489; *Gerres longirostris* 954-965; *Sanzinia madagascariensis*, *Acrantophis madagascariensis* 1151-1154.
- Madeira, *Chromogobius britoi* n. sp. 1073-1080.
- Malaysia, *Gerres silaceus* n. sp. 164-168.
- Maldives, *Gerres longirostris* 954-965.
- Marquesas Islands, *Chromis* (*abrupta* n. sp., *fatuhivae* n. sp., *flavapicis* n. sp.), *Stegastes robertsoni* n. sp. 92-107; *Apogon marquesensis* n. sp. 459-472; *Gerres longirostris* 954-965.
- Maryland, *Caretta caretta* 240-242; 718-725.
- Mauritius, *Gerres longirostris* 954-965.
- Mediterranean Sea, *Bathypterois mediterraneus* (E) 556-560; *Caretta caretta* 808-812; *Chromogobius* (*zebratus, quadrivittatus*) 1073-1080.
- Mexico, *Dermophis* (*mexicanus* [Tab., Chiapas, Oax., Veracruz], *oaxacae* [Oax., Guer., Jal.] 52-64; *Xiphophorus* (10 spp.) (Tam., San Luis Pot., Veracruz, Hid.) 65-81; *Anolis nebulosus* (Jal.) 187-193; *Anolis bourgeai*, *Norops* (*laevis*, *sericeus*) (Veracruz) 274-275; *Phrynosoma* (*asio, orbiculare, coronatum* [Baja Cal.], *laurus* [Puebla], *dilmarsi* [Son.], *mcallii* [Son.], *solare* [Son.]) 309-323; *Rana yavapaiensis* (Son.) 339-354; *Xiphophorus pygmaeus* (San Luis Pot.) 355-364; *Crotalus willardi obscurus* (Chih., Son.) 473-481; *Crotalus enyo* (Baja Cal.) 553-555; *Cnemidophorus* (*gularis septemvittatus, g. scalaris*) (Chih.) 747-765; *Thamnophis validus* (Baja Cal., Son., Sin., Nayarit, Jal., Colima, Mich., Guer.) 1034-1042.
- Michigan, *Chelydra serpentina* 521-525; *Notropis* (*athlerinoides, rubellus*) 656-667; *Rana sylvatica* 907-915.
- Mississippi, *Rana sevosia* 382-388; *Notropis* (*buccatus, longirostris, rafinesquei, sabiniae*) 638-645; *Etheostoma whipplei artesiae* 802-807; *Cycleptus* (*elongatus, meridionalis*) 899-906; *Etheostoma* (*rubrum, lynceum, whipplei*), *Noturus hildebrandi*, *Cyprinella cumura* 916-927.
- Missouri, *Rana spinocephala* 7-13; *Rana areolata* 382-388; *Notropis buccatus* 638-645; *Etheostoma w. whipplei* 802-807; *Cycleptus elongatus* 899-906.
- Molucca Sea, *Eustomias flagellifer* n. sp. 683-699.
- Montana, *Salvelinus confluentus* × *fontinalis* 1093-1099.
- Namibia, *Rhoptropus* (5 of the 6 spp.) 775-780.
- Nevada, *Cyprinodon diabolis* 224-228; *Rana onca* 339-354; *Thamnophis elegans vagrans* 508-513; *Rana muscosa* 945-953.
- New Caledonia, *Gerres longirostris* 954-965.
- New Guinea, *Gerres longirostris* 954-965.
- New Mexico, *Phrynosoma modestum* 309-323, 1114-1122; *Notropis jemezianus* 656-667; *Phrynosoma cornutum* 1114-1122.
- New York, *Notropis rubellus* 656-667; *Gasterosteus aculeatus* 936-944.
- Nicaragua, *Dermophis mexicanus*, *Gymnopsis multiplicata* 52-64.
- Niger, *Heterobranchius bidorsalis* 548-552.
- North Carolina, *Eurycea wilderae* 25-34; *Rana capito* 382-388; *Elassoma boehlkei* 514-520; *Notropis* (*amoensis, septicus*) 656-667; *Anguilla rostrata*

- 848-853; *Cynoscion regalis*, *Ophidion marginatum* 854-859.
- Norwegian Sea, *Lycodes* (*paamiuti* n. sp., *pallidus*, *squamiventer*) 972-996.
- Ohio, *Nerodia sipedon*, *Storeria dekayi*, *Thamnophis sirtalis* 602-614; *Notropis photogenis* 656-667.
- Oklahoma, *Notropis* (*atherinoides*, *girardi*, *perpallidus*, *suttikusi*) 656-667; *Etheostoma* (*w. whipplei*, *w. arlesi*) 802-807.
- Pacific Ocean, *Apogon* (*indicus* n. sp., *susanae*) 459-472; *Eustomias* (*vulgaris* n. sp., *parini* n. sp., *paxtoni* n. sp. [W], *magnificus* n. sp. [N], *longiramis* n. sp. [N], *elongatus* n. sp. [N], *bulbiramis* n. sp. [N], *cryptobulbus* n. sp., *similis* [N], *albibilbus* n. sp. [N], *problematicus* n. sp. [N]) 683-699; *Tomicodon reitz* n. sp. (E) 745-746; *Lamna ditropis* (N) 794-796; *Gerres* (*longirostris*, *oblongus*) (W) 954-965; *Lycodes albolineatus* (N) 972-996; *Gerres erythrouros* (W) 1043-1049.
- Palau Islands, *Gerres longirostris* 954-965.
- Panama, *Dermophis* (*parviceps*, *glandulosus*, *gracilior*), *Caecilia* (*isthmica*, *leucocephala*, *volcani*, *nigricans*), *Oscacilia* (*ochrocephala*, *elongata*), *Gymnophis multiplicata* 52-64; *Strongylura* (*exilis*, *scapularis*) 324-338; *Caecilia volcani* 561-562; *Bolitoglossa anthracina* n. sp. 700-704.
- Papua New Guinea, *Platymanthis browni* n. sp. (Bismarck Arch., New Ireland) 194-202.
- Pennsylvania, *Chelydra serpentina* 129-135; *Etheostoma tippecanoe* 235-239; *Etheostoma* (*zonale*, *olmstedii*), *Percina peltata* 254-261; *Chelydra serpentina* 1050-1057.
- Peru, *Bufo chavin* n. sp. 216-223.
- Philippine Islands, *Lepadichthys springeri* n. sp. 499-500; *Gerres erythrouros* 1043-1049; *Poecilopsetta dorsalis* n. sp. 1081-1086; *Polydactylus longipes* n. sp. 1087-1092.
- Poland, *Gasterosteus aculeatus* 936-944.
- Portugal, *Pelodytes ibericus* 1142-1150.
- Puerto Rico, *Eleutherodactylus cooki* 542-547.
- Red Sea, *Gerres* (*longirostris*, *oblongus*) 954-965.
- Seychelles, *Gerres longirostris* 954-965.
- Solomon Islands, *Gerres erythrouros* 1043-1049.
- South Africa, *Gerres* (*longirostris*, *oblongus*) 954-965.
- South Carolina, *Eurycea bislineata* spp. complex (*wilderiae*, *cirrigera*) 25-34; *Ambystoma talpoideum* 143-149; *Elassoma* (*boehlkei*, *okatie*) 514-520.
- South China Sea, *Eustomias danae* n. sp. 683-699.
- South Dakota, *Thamnophis elegans vagrans* 508-513.
- Spain, *Alytes obstetricans* 169-177.
- Sri Lanka, *Gerres oblongus* 954-965.
- Tanzania, '*Barbus*' *amphigramma* & '*Barbus*' *laintensis* = '*Barbus*' *paludinosus* 243-247.
- Tennessee, *Phoxinus saylari* n. sp. 118-128; *Etheostoma* (*tippecanoe*, *denoncourtii*) 235-239; *Notropis* (*ariommus*, *photogenis*, *telescopus*) 656-667.
- Texas, *Gambusia grisei* 1-6; parthenogenetic *Cnemidophorus laredoensis* = *C. gularis* × *C. sexlineatus* 262-266; *Hybognathus placitus* 563-565; *Notropis sabinae* 638-645; *Notropis* (*amabilis*, *oxyrhynchus*, *shumardi*) 656-667; *Cnemidophorus* (*gularis septemvittatus*, *g. scalaris*) 747-765; *Etheostoma whipplei arlesi* 802-807; *Cycleptus* cf. *elongatus* 899-906.
- Thailand, *Gerres silaceus* n. sp. 164-168; *Gerres oblongus* 954-965; *Gerres erythrouros* 1043-1049.
- Tonga, *Gerres oblongus* 954-965.
- Utah, *Rana onca* 339-354; *Gila* (*cypha*, *robusta*) 389-400; *Thamnophis elegans vagrans* 508-513.
- Venezuela, *Belonion dibranchodon*, *Potamorhaphis* (*guianensis*, *petersi*) 324-338; *Priocorax ariel*, *Serrabrycon magoi*, *Microsternarchus fimbriatus*, *Acetridium martini* 1058-1063; *Physalaemus enesefae* 1064-1072.
- Vietnam, *Paramesotriton deloustali* 997-1009.
- Virginia, *Caretta caretta* 240-242, 718-725; *Strongylura marina* 324-338; *Notropis telescopus* 656-667.
- Washington, *Thamnophis elegans vagrans* 508-513; *Novumbra hubbsi* 860-865; *Salvelinus malma* 1093-1099.
- West Virginia, *Etheostoma tippecanoe* 235-239.
- Wyoming, *Crotalus viridis concolor* 229-234; *Thamnophis elegans vagrans* 508-513.
- Zambia, *Heterobranchius boulengeri*, *Clarias gariepinus* 548-552; *Auchenoglanis occidentalis* 566-570.
- Zanzibar, *Gerres longirostris* 954-965.
- GEOMETRIC MORPHOMETRICS**, *Gila* (*cypha*, *robusta*) (compare body shapes in sympat. spp., good visualization aids spp. ident. for conserv. mngmnt.) 389-400; *Hybognathus placitus* (used to disting. sex. shape dimorph.) 563-565.
- GROWTH**, *Micrometrus minimus* (male growth var. rel. to reprod. strategies) 14-24; *Plethodon kentucki* (male & female growth curves) 108-117; *Ambystoma talpoideum* (eff. of growth rate on facultative paedomorphosis, gender diffs.) 143-149; *Caretta caretta* (oxytetracycline valid. growth rings in wild adult) 240-242; *Niveoscincus ocellatus* (geogr. var. in hab. temp. aff. growth curves) 646-655; *Bufo americanus* (growth rate manip. & thyroxine admin. used to test plastic. in metamorph. timing) 829-834; *Tarpedo californica* (growth curves by gender) 842-847; *Rana sylvatica* (eff. of leech infect. on tdpl. growth) 907-915.
- HABITAT**, *Thamnophis sirtalis parietalis* (mvmnts. & hab. at spring den dispersal, telemetry) 82-91; *Chromis* (*abrupta* n. sp., *fatuhiuae* n. sp., *flavapicis* n. sp.), *Stegastes robertsoni* n. sp. (notes) 92-107; *Phoxinus saylari* n. sp. (notes) 118-128; *Lebias stiansnyae* n. sp. (notes) 150-153; *Gerres silaceus* n. sp. (notes) 164-168; *Podarcis* (*melisellensis*, *muralis*) (thermoreg. in autumn rel. to microhab. temp.) 178-186; *Platymanthis browni* n. sp. (notes) 194-202; *Proceratophrys bigibbosa* sp. group (*brauni* n. sp., *avelinoi*, *bigibbosa*, *palustris*) (notes) 203-215; *Bufo chavin* n. sp. (notes) 216-223; *Cyprinodon diabolis* (tiny popn. size strongly aff. by hab. water level) 224-228; *Etheostoma* (*zonale*, *olmstedii*), *Percina peltata* (introd. sp. causes hab. shift in native congener) 254-261; New World Belontiidae (13 spp.) (phyl. anal. w/ mtDNA & nuclear DNA data, info. on evol. of freshwater hab. shifts) 324-338; *Anolis nitens tandai* (microhab.) 401-412; *Notropis topeka* (stream & watershed charcs. rel. to decline of endngd. sp., mngmnt. implics.) 413-421; *Bedotia masoala* n. sp. (descript.) 482-489; *Lepadichthys springeri* n. sp. (shallow coral reefs)

- 499–500; *Eleutherodactylus cooki* (reprod. seas. rel. to slight temp. diffs. in cave frogs) 542–547; *Auchenoglanis occidentalis* (requirements for nest-building) 566–570; *Niveoscincus ocellatus* (geogr. var. in hab. temp. aff. age & size at matur.) 646–655; *Notropis* (subgenus *Notropis* [16 spp.], 8 other spp.) (phyl. evid. of independ. deriv. of increased olfact. rel. to hab. turbid.) 656–667; *Bolitoglossa anthracina* n. sp. (trop. premontane rainfor., noctur.) 700–704; *Otopharynx pachycheilus* n. sp. (deepwater) 705–717; *Atheris* (*subocularis*, *squamigera*) (possible hab. diffs. btwn. sympat. sister spp.) 737–744; *Cnemidophorus* (*gularis septemvittatus*, *g. scalaris*) (notes on hab. diffs. btwn. subsp.) 747–765; *Rana muscosa* (mvmnts. btwn. habs. rel. to environ. variables & yrly. activ. cycle) 787–793; *Kinosternon baurii* (endngrd. isol. popn. diff. hab. from other popns., not diff. mtDNA) 797–801; *Clinocottus analis*, *Girella nigricans* (diel chngs. in hab. use in tidepools rel. to temper. & pred. avoid.) 835–841; *Etheostoma* (*rubrum*, *lynceum*, *whippiei*), *Noturus hildebrandi*, *Cyprinella camura* (downstream alterations aff. distant upstream habs., popn. responses) 916–927; *Gasterosteus aculeatus* (hab. diffs. in # & ptn. of teeth) 936–944; *Gerrus longirostris* (notes) 954–965; *Lycodes* (*paamiuti* n. sp., *pallidus*, *squamiventer*) (notes) 972–996; *Eptatretus wayuu* n. sp., *Quadratus ancon* n. sp. (depth) 1026–1033; *Gerrus phaiya* n. sp. (notes) 1043–1049; *Chromogobius* (*britoi* n. sp., *zebratus*, *quadrivittatus*) (notes) 1073–1080; *Hyla regilla* (after acct. for hab. var., introd. pred. fish reduce frog popns.) 1130–1137.
- HERMAPHRODITISM.** *Bathypterois mediterraneus* (gonad devel., morph. & histol., dev. of eggs, seas.) 556–560.
- HISTOLOGY.** *Caretta caretta* (of bone showing growth rings in wild adult) 240–242; *Brevoortia tyrannus*, *Leiostomus xanthurus* (larval devel. of function of swimbladder, spp. diffs.) 430–442; *Anolis carolinensis* (hist. of taste buds on tongue) 490–498; *Bathypterois mediterraneus* (hermaphr. gonad devel., dev. of eggs) 556–560; *Caretta caretta* (of retina rel. to function, ecol. benefits) 718–725; *Rana muscosa* (oral chytrid fungal infect. in tdpls., diagn. charcs.) 945–953.
- HOME RANGE.** *Plethodon kentucki* (long-term site fidelity) 108–117.
- HYBRIDIZATION.** parthenogenetic *Cnemidophorus laredoensis* = *C. gularis* × *C. sexlineatus* (in parthen., sep. hybrid. acts produce sep. clonal complexes) 262–266; *Salvelinus* (*confluentus*, *fontinalis*, *confluentus* × *fontinalis*) (method to ident. spp. & their hybrids) 1093–1099.
- LARVAE.** *Ambystoma talpoideum* (eff. of body size on facultative paedomorphosis, gender diffs.) 143–149; *Atelopus mindoensis* (descript. of tdpl.) 276–278; *Ascapheus truei* (competit. btwn. tdpls. & insect herbivores) 422–429; *Brevoortia tyrannus*, *Leiostomus xanthurus* (larval devel. of function of swimbladder, spp. diffs.) 430–442; *Etheostoma* (5 spp.), *Percina* (3 spp.) (diffs. in larval transport in sympat. spp. correl. w/ life hist. & gene flow diffs.) 766–774; *Bufo americanus* (growth rate manip. & thyroxine admin. used to show loss of plastic. in metamorph. timing late in tdpl. life) 829–834; *Rana sylvatica* (eff. of leech ectoparasitic infect. on tdpls.) 907–915; *Rana muscosa* (oral chytrid fungal infect. in tdpls., diagn. charcs.) 945–953; *Hyla regilla* (introd. pred. fish reduce frog popns. thru pred. on tdpls.) 1130–1137.
- LATERAL LINE.** *Dasyatis* (14 of 35 spp.), *Himantura* (*gerrardi*, *schmardae*) (charcs. in phyl. anal.) 615–627; *Lycodes pallidus* spp. complex (*paamiuti* n. sp. & 4 other spp.) (charcs. in phyl. anal.) 972–996; *Aspidosaurus taurus* n. sp. (unique condit. in genus) 1010–1016; *Moenkhausia diktyota* n. sp. (incomplete lat. line) 1058–1063; *Chromogobius* (*britoi* n. sp., *zebratus*, *quadrivittatus*) (charcs. in disting. n. sp.) 1073–1080.
- LIFE HISTORY.** *Micrometrus minimus* (male growth var. rel. to reprod. strategies) 14–24; *Plethodon kentucki* (age, growth, site fidelity) 108–117; *Phoxinus phoxinus* (*saylori* n. sp. (notes) 118–128; *Chelydra serpentina* (egg charcs., maternal effects, & incub. temp. rel. to hatching.) 129–135; *Ambystoma talpoideum* (eff. of body size on facultative paedomorphosis, gender diffs.) 143–149; *Niveoscincus ocellatus* (geogr. var. in hab. temp. aff. age & size at matur.) 646–655; *Etheostoma* (5 spp.), *Percina* (3 spp.) (diffs. in larval transport in sympat. spp. correl. w/ life hist. & gene flow diffs.) 766–774; *Torpedo californica* (longev., growth, popn. age struct., age & size at matur., fecund., mortal.) 842–847.
- LIGHT.** *Gekko gekko* (aff. calling) 248–253.
- LOCOMOTION.** *Thamnophis sirtalis parietalis* (loc. perform. at spring den dispersal) 82–91; *Podarcis hispanica* (specializ. of tail muscles for min. damage at autotomy) 154–163; *Podarcis* (*melisellensis*, *muralis*) (thermoreg. in autumn, reduced loc. perform.) 178–186; *Chelydra serpentina* (juv. righting response duration aff. by body temp. & family ident.) 1050–1057.
- METHODS.** *Micrometrus minimus* (male otolith rings show growth var. rel. to breeding activ.) 14–24; *Caretta caretta* (oxytetracycline valid. growth rings in wild adult) 240–242; *Bitis arietans* (videoradiography shows internal head, mouth & jaw mvmnts.) 270–273; *Phrynosoma* (11 spp.) (discuss implcs. of diff. consensus techniques when phyl. hypths. of diff. data sets are incongruent) 309–323; *Thamnophis sirtalis* (abnormal thermoreg. in captive gravid females lowers offspring viabil.) 365–371; *Gila* (*cypha*, *robusta*) (geom. morphometrics. advantage over truss anal.: better visualization aids spp. ident. for conserv. mngmnt.) 389–400; fishes (clad. anal. of fishes based on nuclear introns criticized) 536–541; *Notropis* (subgenus *Notropis* [16 spp.], 8 other spp.) (evid. that morph. charcs. rel. to trophic special. can interfere w/ phyl. anal.) 656–667; *Etheostoma* (5 spp.), *Percina* (3 spp.) (sp. ident. of larvae of closely rel. spp. by SSCPs of mtDNA control region) 766–774; *Negaprion brevirostris* (microsat. DNA devel. for popn. & parentage studies in shark) 781–786;

- Salvelinus (confluentus, fontinalis, confluentus* \times *fontinalis, malma*) (interspersed nuclear DNA w/ PCR primers ident. spp. & their hybrids, verify w/ allozymes) 1093-1099.
- MICROSATELLITE DNA, *Negaprion brevirostris* (in determ. patern. of offsp. in shark) 781-786.
- MIGRATION, *Brevoortia tyrannus*, *Leiostomus xanthurus* (vertical migration rel. to larval swimbladder devel. & function, spp. diffs.) 430-442; *Chelydra serpentina* (juvs. sensit. to dehyd. during land migr.) 521-525; *Rana muscosa* (btwn. habs. during yrly. activ. seas.) 787-793.
- MITOCHONDRIAL DNA, *Etheostoma (tippecanoe, denoncourtii)* (confirm sp. ident. of *E. denoncourtii* in Duck R. & Buffalo R.) 235-239; *Phrynosoma* (11 spp.) (in phyl. anal. of genus) 309-323; New World Belonidae (13 spp.) (in phyl. anal., agrees w/ nuclear DNA data) 324-338; *Rana (onca, yavapaiensis)* (in sp. determ.) 339-354; *Thamnophis (e. elegans, e. terrestris, e. vagrans, e. arizonae)* (in phyl. anal.) 508-513; *Elassoma (boehlkei, okatie)* (w/ nuclear DNA, determ. of ESUs) 514-520; *Moxostoma robustum* (in determ. ESUs) 526-530; *Clarias* (4 of the 32 spp.), *Heterobranchius* (all 4 spp.), *Channallabes apus* (evid. for monophyly of *H.* & paraphyly of *Clarias*) 548-552; Pomacentridae (14 of the 29 genera) (in phyl. anal.) 591-601; *Trachemys scripta elegans* (mtDNA gene responses to anoxia) 628-637; *Notropis (dorsalis)* spp. group (5 spp.), 5 other spp.), 6 other shiner spp. (5 genera) (in phyl. anal.) 638-645; *Notropis* (subgenus *Notropis* [16 spp.], 8 other spp.) (in phyl. anal.) 656-667; *Atheris (subocularis, squamigera)* (in phyl. anal.) 737-744; *Etheostoma* (5 spp.), *Percina* (3 spp.) (sp. ident. of larvae of closely rel. spp. by SSCPs of mtDNA control region) 766-774; *Rhoptropus* (5 of the 6 spp.) (in phyl. anal.) 775-780; *Kinosternon baurii* (in phyl. anal. of endnigrd. popn.) 797-801; *Lepidomeda vittata* (shows low genet. var., 3 disjunct popns.) 813-819; *Paramesotriton* (4 of the 6 spp.), *Pachytriton* (1 of the 2 spp.), *Cynops* (2 of the 7 spp.) (in phyl. anal.) 997-1009; *Batrachuperus* (the 5 spp. in China) (in phyl. anal., shows some spp. polyphyl.) 1100-1107; *Barbus gananensis* (reveals 2 morphotypes in *B. gananensis*, 3rd morph is undescr. sp.) 1123-1129; *Sanzinia madagascariensis*, *Acrantophis madagascariensis*, *Boa constrictor* (in phyl. anal. & resurr. of genera) 1151-1154.
- MORPHOLOGY, Teleost fishes (devel. of replcmnt. teeth, charc. distrib., evol. of derived state) 35-51; *Podarcis hispanica* (specializ. of tail muscles for min. damage at autotomy) 154-163; Osteoglossomorpha (*Hiodon*, *Chitala*, *Osteoglossum*) (descript. of morph. var. in charc. complex, import. in using the complex in phyl. anal.) 372-381; *Gila (cypha, robusta)* (geom. morphomets. advantage over truss anal.: better visualization aids spp. ident. for conserv. mngmnt.) 389-400; *Bathypterois mediterraneus* (hermaphr. gonad struct. devel.) 556-560; *Eustomias* (subgenus *Dinematichirus*, 12 n. sp., *similis*, cf. *bigelowi*) (descript. of barbels of n. spp., compare w/in & btwn. subgen.) 683-699; *Caretta caretta* (histol. of retina rel. to function, ecol. benefits) 718-725; *Bufo marinus* (male forelimb robustness, evid. for sex. select.) 928-935; *Chromogobius (britoi* n. sp., *zebratus*, *quadrivittatus*) (cheek myology import. trait for phyl. anal. of gobies) 1073-1080; *Barbus gananensis* (mtDNA reveals 2 morphotypes in *B. gananensis*, 3rd morph is undescr. sp.) 1123-1129.
- NESTING, *Eleutherodactylus cooki* (male parental care of nests in cave frog) 542-547; *Auchenoglanis occidentalis* (nesting & brooding beh., male parental care) 566-570; *Natator depressus* (egg dev. & hatching. condit. rel. to egg incub. temp. & hydr.) 668-682; *Caretta caretta* (nest factors rel. to dipteran larval infest. of eggs) 808-812.
- NOMENCLATURE, *Proceratophrys (avelinoi, bigibbosa)* (*P. cristinae* = *P. bigibbosa*, specify type local. of *P. avelinoi*) 203-215; *Barbus amphigramma* & *Barbus taitiensis* = *Barbus paludinosus* (2 spp. synonym. b/c color varies w/ water clarity) 243-247; *Curimata vari* = *Cyphocharax santacalarinae* (*C. vari* synonym. w/ *C. santacalarinae*, examined type specimens of *C. vari*) 267-269; *Anolis bourgeaui*, *Norops (laeiventriss, sericeus)* (synon. sp., examine types) 274-275; *Caecilia volcani* (clarif. of holotype & its location) 561-562; *Atheris (subocularis, squamigera)* (resurr. *A. subocularis*) 737-744; *Etheostoma (w. whipplei, w. artesiae)* (raise subspp. to sp. status) 802-807; *Typhlops stadelmani* (resurr. *T. stadelmani*) 820-822; *Amblycirtus indicus* = *A. pinos* (synon. sp., original local. error) 870-871; *Gerres (longirostris, oblongus)* (*G. longirostris* synonym. w/ 7 other spp., *G. oblongatus* synonym. w/ 2 other spp., design. neotype & lectotype, respectively) 954-965; *Sanzinia madagascariensis*, *Acrantophis madagascariensis*, *Boa constrictor* (resurr. *S. & A.*, mtDNA data) 1151-1154.
- NUCLEAR DNA, New World Belonidae (13 spp.) (in phyl. anal., agrees w/ mtDNA data) 324-338; *Rana (onca, yavapaiensis)* (in sp. determ.) 339-354; *Elassoma (boehlkei, okatie)* (w/ mtDNA, determ. of ESUs) 514-520; fishes (clad. anal. of fishes based on nuclear introns criticized) 536-541; *Salvelinus (confluentus, fontinalis, confluentus* \times *fontinalis, malma*) (interspersed nuclear DNA w/ PCR primers ident. spp. & their hybrids, verify w/ allozymes) 1093-1099.
- OLFACTION, *Notropis* (subgenus *Notropis* [16 spp.], 8 other spp.) (phyl. evid. of independ. deriv. of increased olfact. rel. to hab. turbid.) 656-667.
- OSTEOLOGY, Teleost fishes (devel. of replcmnt. teeth, rel. to osteol.) 35-51; Osteoglossomorpha (*Hiodon*, *Chitala*, *Osteoglossum*) (descript. of morph. var. in charc. complex, import. in using the complex in phyl. anal.) 372-381; snakes & lizards (intramandib. septum anal. supports snake-anguimorph lizard affin.) 531-535; *Dasyatis* (14 of 35 spp.), *Himantura (gerrardi, schmardae)* (charcs. in phyl. anal.) 615-627.
- PARASITES, *Caretta caretta* (nest factors rel. to dipteran larval infest. of eggs) 808-812; *Anguilla rostrata* (introd. swimbladder nematode, infect. rates, aff.

- on hosts) 848-853; *Serrasalmus rhombeus* (evid. for cryptic spp. incl. diff. gill parasites) 866-869; *Rana sylvatica* (eff. of leech ectoparasitic infect. on tadpls.) 907-915; *Rana muscosa* (high oral chytrid fungal infect. rates in tadpls., ecol. correls., rel. to declining popns.) 945-953.
- PARTHENOGENESIS**, parthenogenetic *Cnemidophorus laredoensis* = *C. gularis* × *C. sexlineatus* (sep. hybrid origins of clonal complexes A & B) 262-266; *Cnemidophorus (gularis) septemvittatus, g. scalaris* (gonochr. spp.-complex, Chihuahuan popns. assigned to subspp. by color. & scutation) 747-765.
- PHEROMONES**, *Ambystoma (opacum, talpoideum)* (juv. response to marked substrates, w/in & btwn. spp.) 1017-1025.
- PHYLOGENETIC ANALYSIS**, Teleost fishes (clad. anal. of devel. of replcmt. teeth, charc. distrib.) 35-51; *Xiphophorus* (11 spp.) (clad. anal., allozyme charcs.) 65-81; *Etheostoma (tippecanoe, denoncourtii)* (clad. anal. of all popns. of both spp., mtDNA data, confirm sp. ident. of *E. denoncourtii* in Duck R. & Buffalo R.) 235-239; *Phrynosoma* (11 spp.) (clad. anal. of genus, mtDNA & morph. charcs., much incongruence btwn. the 2 data sets) 309-323; New World Belontiidae (13 spp.) (clad. anal., mtDNA, nuclear DNA & morph. charcs., info. on evol. of freshwater hab. shifts) 324-338; *Rana (onca, yavapaiensis)* (clad. anal. shows *R. onca* valid, mtDNA & nuclear DNA evid., conserv. implics.) 339-354; *Osteoglossomorpha (Hiodon, Chitala, Osteoglossum)* (descript. of morph. var. in charc. complex, import. in using the complex in phyl. anal.) 372-381; *Rana (areolata, capito, sevosa)* (clad. anal., allozyme evid. for resurr. of *R. sevosa* & separ. of *R. areolata* & *R. capito*) 382-388; *Thamnophis (e. elegans, e. terrestris, e. vagrans, e. arizonae)* (phyl. anal. of subspp., mtDNA data, 2 subspp. paraphyl.) 508-513; *Elasmosoma (boehlkei, okatie)* (of popns., mtDNA & nuclear DNA data) 514-520; fishes (clad. anal. of fishes based on nuclear introns criticized) 536-541; *Clarias* (4 of the 32 spp.), *Heterobranchius* (all 4 spp.), *Channallabes apus* (clad. anal, mtDNA data, evid. for monophyly of *H.* & paraphyly of *Clarias*) 548-552; Pomacentridae (14 of the 29 genera) (clad. anal., mtDNA data) 591-601; *Dasylatis* (14 of 35 spp.), *Himantura (gerrardi, schmardae)* (clad. anal., lat. line, osteol., body & tail shape charcs., genera not monophy.) 615-627; *Notropis (dorsalis)* spp. group (5 spp.), 5 other spp.), 6 other shiner spp. (5 genera) (clad. anal., mtDNA data, sister rels. w/in *N. dorsalis* spp. group, add *N. buccatus* to spp. group) 638-645; *Notropis* (subgenus *Notropis* [16 spp.], 8 other spp.) (clad. anal., mtDNA data, sister rels. in subgenus, removal of 2 spp. from subgenus, *Notropis* not monophy.) 656-667; *Atheris (subocularis, squamigera)* (resurr. *A. subocularis*, redescribe *A. subocularis* & Cameroon popn. of *A. squamigera*, clad. anal. of 9 spp. *Atheris*, mtDNA data) 737-744; *Rhopropus* (5 of the 6 spp.) (clad. anal., mtDNA data, agrees w/ previous phyl. anal. w/ morph. & allozyme data) 775-780; *Kinosternon bairii* (clad. anal. of popns. across sp. range, endngd. isol. popn. not diff. mtDNA) 797-801; *Lycodes pallidus* spp. complex (*paamiuti* n. sp. & 4 other spp.) (clad. anal., lat. line & morph. charcs., sister spp.) 972-996; *Paramesotriton* (4 of the 6 spp.), *Pachytriton* (1 of the 2 spp.), *Cynops* (2 of the 7 spp.) (clad. anal., mtDNA data, all genera in one clade, *Cynops* polyphyl., morph. charcs. of 14 spp. to clarify rels.) 997-1009; *Batrachuperus* (the 5 spp. in China) (clad. anal., mtDNA data, some spp. polyphyl.) 1100-1107; *Barbus gananensis* (clad. anal. of 3 morphotypes, mtDNA data, show one morph is undescr. sp.) 1123-1129; *Sanzinia madagascariensis*, *Acrantophis madagascariensis*, *Boa constrictor* (clad. anal., mtDNA data, resurr. *S.* & *A.*, still closer to *Boa* than to pythons) 1151-1154.
- PHYSIOLOGY**, *Gambusia grisei* (evid. of matrotrophy) 1-6; *Brevoortia tyrannus*, *Leiostomus xanthurus* (source of gas for larval swimbladder devel. & function, spp. diff.) 430-442; *Trachemys scripta elegans* (met. rate red. in anoxia rel. to mtDNA gene expression) 628-637; *Natator depressus* (influence of incub. temp. & hydr. on physiol. of embryos & hatchlings.) 668-682; *Lamna ditropis* (body temps. well above ambient) 794-796; *Cephaloscyllium ventriosum* (fasting & postfeeding met. rate, sedentary shark) 1108-1113; *Phrynosoma (cornutum)* [squirts blood], 5 of 7 spp. not prev. reported to squirt blood) (physiol. cost of blood-squirting) 1114-1122.
- POPULATIONS**, *Rana spinocephala* (diffs. in gen. var. in response to environ. stressor) 7-13; *Eurycea bislineata* spp. complex (*wilderae, cirrigera*) (genet. evid. for valid. of spp. at contact zone) 25-34; *Xiphophorus* (11 spp.) (29 popns., phyl. anal., allozyme charcs.) 65-81; *Thamnophis sirtalis parietalis* (mating & mvmt. effects of unusually dense popn. at spring den dispersal) 82-91; *Cyprinodon diabolis* (tiny popn. size strongly aff. by hab. water level) 224-228; *Crotalus viridis concolor* (3 popns., female reprod. biol., compare to other popns.) 229-234; *Xiphophorus pygmaeus* (some large males in one popn., none in another, gene diff. than lg. male gene in other *Xiphophorus* spp.) 355-364; *Rana (areolata, capito, sevosa)* (phyl. anal. of 20 popns. of *R. capito*, allozyme evid. for resurr. of *R. sevosa* & separ. of *R. areolata* & *R. capito*) 382-388; *Elasmosoma (boehlkei, okatie)* (in each river system one ESU) 514-520; *Maxostoma robustum* (ESU in each river system, conserv. implics.) 526-530; *Nerodia sipedon*, *Storeria dekayi*, *Thamnophis sirtalis* (popn. subdiv. ptms. & gene flow, spp. diff. rel. to ecol. diff.) 602-614; *Niveoscincus ocellatus* (popn. var. in hab. temp. aff. age & size at matur.) 646-655; *Kinosternon bairii* (phyl. anal. of popns. across sp. range, endngd. isol. popn. not diff. mtDNA) 797-801; *Lepidomeda vittata* (popn. genet., mtDNA & allozyme data, 3 disjunct popns., low gen. var.) 813-819; *Torpedo californica* (demographics, age & growth, ann.popn. reprod., mortal.) 842-847; *Etheostoma (rubrum, lynceum, whipplei)*, *Noturus hildebrandi*, *Cyprinella camura* (downstream alterations aff. distant upstream habs., popn. responses) 916-927; *Gaster-*

osteus aculeatus (popn. diffs. in # & ptn. of teeth rel. to hab. & Atlantic vs. Pacific basin loc.) 936-944.

PREDATION. *Podarcis hispanica* (specializ. of tail muscles for min. damage at autotomy) 154-163; *Anolis nebulosus* (pred. defence aff. perch height) 187-193; *Anolis nitens tandai* (prey size rel. to lizard body size, lizard microhab. provides protect. from pred.) 401-412; *Anolis carolinensis* (taste in prey discrim.) 490-498; *Eleutherodactylus cooki* (high egg pred. due to cannib. in cave frog) 542-547; *Crotalus enyo* (chng. in prey types with size of snake) 553-555; *Rana muscosa* (mvmnts. btwn. lakes rel. to avail. of prey, *H. regilla* tdppls., & lack of preds., introd. trout) 787-793; *Clinocottus analis*, *Girella nigricans* (diel chngs. in hab. use in tidepools rel. to temper. & pred. avoid.) 835-841; *Thamnophis validus* (prey type rel. to snake size) 1034-1042; *Phrynosoma [cornutum]* [squirts blood], 5 of 7 spp. not prev. reported to squirt blood (var. in blood-squirting defence to dog pred., absent in 3 spp.) 1114-1122; *Hyla regilla* (introd. pred. fish reduce frog popns. thru pred. on tdppls.) 1130-1137.

REPRODUCTION. *Gambusia geiseri* (evid. of matrotrophy) 1-6; *Micrometrus minimus* (male growth var. rel. to reprod. strategies) 14-24; *Thamnophis sirtalis parietalis* (mating, ctshp. & mass loss at spring den dispersal) 82-91; *Phoxinus phoxinus* n. sp. (notes on seas., nest-associates) 118-128; *Chelydra serpentina* (egg charcs., maternal effects & incub. temp. rel. to htchng.) 129-135; *Ambystoma talpoideum* (gender diffs. in reprod. costs rel. to gender diffs. in facultative paedomorphosis) 143-149; *Alytes obstetricans* (female mate choice rel. to call timing in male duets) 169-177; *Anolis nebulosus* (perch height & gender diffs. rel. to reprod. seas.) 187-193; *Proceratophrys bigibbosa* sp. group (*brauni* n. sp., *avelinoi*, *bigibbosa*, *palustris*) (notes on seas. & calling) 203-215; *Bufo chavini* n. sp. (notes on seas. & clutch size) 216-223; *Crotalus viridis concolor* (seas. rel. to temp., preg. female mvmnts., litter size, female size, offsp. size & sex ratio, 3 popns.) 229-234; *Gekko gekko* (seas. var. in calls rel. to reprod.) 248-253; *Xiphophorus pygmaeus* (female pref. for lg. males absent, gene basis for male size polymorph. diff. than in other *Xiphophorus* spp.) 355-364; *Thamnophis sirtalis* (abnormal thermoreg. in captive gravid females lowers offspring viabil.) 365-371; *Varanus* (incub. time, clutch size, egg mass & neonate size rel. to matern. size & phylogeny) 443-458; *Crotalus [willardi] obscurus*, *w. willardi* (seas., reprod. freq., litter size rel. to matern. size, neonate size) 473-481; *Eleutherodactylus cooki* (seas. rel. to slight temper. chngs. in caves) 542-547; *Bathypterois mediterraneus* (hermaphr. gonad devel., morph. & histol., dev. of eggs, seas.) 556-560; *Auchenoglanis occidentalis* (nesting & brooding beh., male parental care) 566-570; *Nivrosincerus ocellatus* (geogr. var. in hab. temp. aff. age & size at matur., reprod. conseqs.) 646-655; *Natator depressus* (egg dev. & htchlng. condit. rel. to egg incub. temp.

& hydr.) 668-682; *Jenynsia weitzmani* n. sp. (subgenus *Plesiogenysia*) (vivip. sp., ovary & embryo morph.) 726-736; *Etheostoma* (5 spp.), *Percina* (3 spp.) (diffs. in larval transport in sympat. spp. correl. w/ life hist. & gene flow diffs.) 766-774; *Negaprion brevirostris* (natal homing, biennial reprod. cycle, microsat. DNA evid. of mult. patern. of litter) 781-786; *Rana muscosa* (seas. & hab. of egg masses) 787-793; *Caretta caretta* (nest factors rel. to dipteran larval infest. of eggs) 808-812; *Lucania goodei* (male breeding beh.) 823-828; *Torpedo californica* (age & size at sex. matur., fecund., popn. ann. reprod. rate) 842-847; *Bufo marinus* (forelimb robustness aids breeding males, evid. for sex. select.) 928-935; *Sceloporus jarrovi* (eff. of testost. implants on male feeding & soc. beh. in presence of receptive & non-recept. females) 966-971; *Physalaemus ensejiae* (call descript., var.) 1064-1072; *Python curtus* (female reprod. cycle starts but not complete unless male present) 1138-1141.

RESPIRATION. *Trachemys scripta elegans* (mtDNA gene responses to anoxia) 628-637; *Cephaloscyllium ventriosum* (met. rate as O₂ uptake, fasting & post-feeding) 1108-1113.

SALINITY. *Kinosternon baurii* (endngd. isol. popn. saline hab., diff. from other popns., not diff. mtDNA) 797-801.

SEX. *Thamnophis sirtalis parietalis* (ratios at spring den dispersal) 82-91; *Ambystoma talpoideum* (eff. of gender on facultative paedomorphosis) 143-149; *Crotalus viridis concolor* (sex ratio of offsp.) 229-234; *Atheris (subocularis, squamigera)* (only male specimens of *A. subocularis*, evol. hypoths.) 737-744.

SEXUAL DIMORPHISM. *Thamnophis sirtalis parietalis* (of mvmnts., mating & mass loss at spring den dispersal) 82-91; *Plethodon kentucki* (in growth curves) 108-117; *Anolis nitens tandai* (in mass, limb length, dewlap size & color) 401-412; *Beudanticus masoala* n. sp. (strong, greater than congeners) 482-489; *Crotalus enyo* (sex. size dimorph. but no signif. diet diffs. btwn. genders) 553-555; *Hybognathus placitus* (body shape dimorph.) 563-565; *Bufo marinus* (male forelimb robustness, evid. for sex. select.) 928-935; *Gasterosteus aculeatus* (large gender diffs. in tooth #) 936-944; *Moenkhausia diktyota* n. sp. (mature males have hooks on anal fins) 1058-1063.

SIZE. *Plethodon kentucki* (correl. of age & body size, gender diffs.) 108-117; *Chelydra serpentina* (maternal size rel. to egg size, & egg size rel. to egg components, htchng. success & htchlng. size) 129-135; *Ambystoma talpoideum* (eff. of body size on facultative paedomorphosis, gender diffs.) 143-149; *Crotalus viridis concolor* (dwarf snake, female & offsp. size, litter size rel. to female size) 229-234; *Xiphophorus pygmaeus* (some large males in one popn., none in another, gene diff. than lg. male gene in other *Xiphophorus* spp.) 355-364; *Varanus* (incub. time, clutch size, egg mass & neonate size rel. to matern. size & phylogeny) 443-458; *Crotalus [willardi] obscurus*, *w. willardi* (neo-

- nate size, litter size rel. to matern. size) 473-481; *Crotalus enyo* (chng. in prey types with size of snake) 553-555; *Nivoseincus ocellatus* (geogr. var. in hab. temp. aff. age & size at matur.) 646-655; *Natator depressus* (eff. on hatching size of diff. incub. temps. & hydric condits.) 668-682; *Bufo americanus* (growth rate manip. & thyroxine admin. used to test plastic. in metamorph. timing, diff. sizes at metamorph.) 829-834; *Torpedo californica* (age & size at sex. matur., max. size) 842-847; *Rana sylvatica* (eff. of tdpl. body size on leech-infected tdpl. growth & surv.) 907-915; *Aspidoras taurus* n. sp. (largest in genus) 1010-1016; *Thamnophis validus* (prey type rel. to snake size) 1034-1042; *Physalaemus enesefae* (call var. rel. to body size) 1064-1072.
- SOUND**, *Bitis arietans* (mechanics of defensive hissing in snake) 270-273; *Cynoscion regalis*, *Ophidion marginatum* (captive *O. marginatum* "chatters" like field recordings of "chatters" attrib. to *C. regalis*, oscillograms & sonograms) 854-859; *Physalaemus enesefae* (call descript., var., oscillograms, sonograms) 1064-1072.
- SURVIVAL**, *Plethodon kentucki* (longev.) 108-117; *Rana sylvatica* (eff. of leech infect. on tdpl. surv.) 907-915.
- SWIMBLADDER**, *Brevoortia tyrannus*, *Leiostomus xanthurus* (larval devel. of function of swimbladder, spp. diffs.) 430-442; *Anguilla rostrata* (introd. swimbladder parasite) 848-853.
- SYSTEMATICS**, *Eurycea bislineata* spp. complex (*willerae*, *carrigera*) (genet. evid. for valid. of spp. at contact zone) 25-34; Teleost fishes (devel. of replcmt. teeth, charc. distrib., evol. of derived state) 35-51; *Dermophis* (7 spp.), *Gymnophis* (2 spp.), *Oscacilia* (3 spp.), *Caecilia* (4 spp.) (revise Central Amer. caecilians, evol. notes, key to spp.) 52-64; *Xiphophorus* (11 spp.) (phyl. anal., allozyme charcs.) 65-81; *Chromis* (*abrupta* n. sp., *fa-tuhivae* n. sp., *flavapicis* n. sp.), *Stegastes robertsoni* n. sp. (n. sp. endemic to Marquesas Isls.) 92-107; *Phoxinus saylari* n. sp. (n. sp., hypoth. sister sp., limited distrib.) 118-128; *Harttia longipinna* n. sp. (n. sp., compar. to congeners, key to *Harttia* spp.) 136-142; *Lebias stiansnyae* n. sp. (n. sp. rel. to congeners, clad. notes) 150-153; *Gerres silaceus* n. sp. (n. sp. in *G. setifer* complex, compar. to those spp. & *G. poietii*) 164-168; *Platymantis browni* n. sp. (n. sp. compar. to all Papuan congeners) 194-202; *Proceratophrys bigibbosa* sp. group (*brauni* n. sp., *avelinai*, *bigibbosa*, *palustris*) (n. sp. & redescript. of other spp., key to spp., synon. *P. cristinae* into *P. bigibbosa*) 203-215; *Bufo chavin* n. sp. (n. sp., *B. veraguensis* sp. group) 216-223; *Etheostoma* (*tippecanoe*, *denoncourtii*) (phyl. anal. of Duck R. & Buffalo R. *E. denoncourtii*, mtDNA data, confirm sp. ident.) 235-239; *Barbus* *amphigramma* & *Barbus* *taitensis* = *Barbus* *paludinosus* (coloration as diagn. charc. not valid) 243-247; *Curimata vari* = *Cyphocharax santacatarinae* (synon. spp.) 267-269; *Anolis bourgaeni*, *Norops* (*laeiventr*, *sericeus*) (synon. spp., examine types) 274-275; *Atelopus mindoensis* (descript. of tdpl., group tdpls. phylogenetically) 276-278; *Phrynosoma* (11 spp.) (phyl. anal. of genus, mtDNA & morph. charcs., much incongruence btwn. the 2 data sets) 309-323; New World Belontiidae (13 spp.) (phyl. anal., mtDNA, nuclear DNA & morph. charcs., info. on evol. of freshwater hab. shifts) 324-338; *Rana* (*onca*, *yavapaiensis*) (phyl. anal. shows *R. onca* valid, mtDNA & nuclear DNA evid., conserv. implic.) 339-354; Osteoglossomorpha (*Hiodon*, *Chitla*, *Osteoglossum*) (descript. of morph. var. in charc. complex, import. in using the complex in phyl. anal.) 372-381; *Rana* (*areolata*, *capito*, *sevo*) (phyl. anal., allozyme evid. for resurr. of *R. sevo* & separ. of *R. areolata* & *R. capito*) 382-388; *Gila* (*cypha*, *robusta*) (geom. morphomet. shape anal. separ. sympat. spp. in most localities) 389-400; *Apogon* (*erythrinus*, *marquesensis* n. sp., *indicus* n. sp., *susanae*) (revise spp. complex, key to spp.) 459-472; *Bedotia masoala* n. sp. (n. sp. compared to Madagascar congeners) 482-489; *Lepidichthys springeri* n. sp. (n. sp., key to all 10 spp. of genus) 499-500; *Apostolepis* (*breviceps* n. sp., *vittata*) (n. sp., phyl. notes, closest rels.) 501-507; *Thamnophis* (*e. elegans*, *e. terrestris*, *e. vagrans*, *e. arizonae*) (phyl. anal. of subspp., mtDNA data, 2 subspp. paraphyl.) 508-513; snakes & lizards (intramandib. septum anal. supports snake-anguimorph lizard affin.) 531-535; fishes (clad. anal. of fishes based on nuclear introns criticized) 536-541; *Clarias* (4 of the 32 spp.), *Heterobranchius* (all 4 spp.), *Channallabes apus* (phyl. anal., mtDNA data, evid. for monophyly of *H.* & paraphyly of *Clarias*) 548-552; Pomacentridae (14 of the 29 genera) (phyl. anal., mtDNA data, supports monophyly of Amphiprioninae, not of 2 other subfams.) 591-601; *Dasyatis* (14 of 35 spp.), *Himantura* (*gerrardi*, *schmardae*) (phyl. anal., lat. line, osteol., body & tail shape charcs., genera not monophy.) 615-627; *Notropis* (*dorsalis* spp. group (5 spp.), 5 other spp.), 6 other shiner spp. (5 genera) (phyl. anal., mtDNA data, sister rels. w/ in *N. dorsalis* spp. group, add *N. buccatus* to spp. group) 638-645; *Notropis* (subgenus *Notropis* [16 spp.], 8 other spp.) (phyl. anal., mtDNA data, sister rels. in subgenus, removal of 2 spp. from subgenus, *Notropis* not monophy.) 656-667; *Eustomias* (subgenus *Dinematichirus*: 12 n. sp., *similis*, cf. *bigelovi*) (n. spp., new specimens & redescribe *E. similis*, describe *E. cf. bigelovi*, key to subgen.) 683-699; *Bolitoglossa anthracina* n. sp. (n. sp. compare to sympat. & other Cent. Amer. congeners) 700-704; *Otopharynx pachycheilus* n. sp. (n. sp. compared to congeners & related thick-lipped sp.) 705-717; *Jenynsia weitzmani* n. sp. (subgenus *Plesiojenynsia*) (n. sp., phyl. anal. of genus, osteol. charcs., sister rels., key to spp. of genus) 726-736; *Atheris* (*subocularis*, *squamigera*) (resurr. *A. subocularis*, redescribe *A. subocularis* & Cameroon popn. of *A. squamigera*, phyl. anal. of 9 spp. *Atheris*, mtDNA data) 737-744; *Tomicodon reitzi* n. sp. (n. sp. compare to congeners) 745-746; *Cnemidophorus* (*gularis septemvittatus*, *g. scalaris*) (Chihuahuan popns. assigned to subspp. by color. & scutation) 747-765; *Rhopropus* (5 of the 6 spp.) (phyl. anal., mtDNA data, agrees w/ previous phyl. anal. w/

- morph. & allozyme data) 775–780; *Etheostoma* (*w. whipplei*, *w. artesiae*) (raise subspp. to sp. status, rediagnosis, non-overlapping scale counts) 802–807; *Typhlops stadelmani* (resurr. & rediagn. *T. stadelmani*, compare to *T. tenuis*) 820–822; *Novumbra hubbsi* (karyotype links *N. hubbsi* w/ *Dallia*) 860–865; *Serrasalmus rhombeus* (2 karyotypes evid. for cryptic spp., some morph. & parasite diffs. btwn. forms) 866–869; *Cycleptus* (*elongatus*, *meridionalis*, sp.) (3 allopat. ESUs, electrophor. data, Rio Grande popn. is 3rd sp.) 899–906; *Gerres* (*longirostris*, *oblongus*) (*G. longirostris* synonym. w/ 7 other spp., *G. oblongatus* synonym. w/ 2 other spp., design. neotype & lectotype, respectively, rediagnose, compare to each other & to synonym. spp. & problematic specimens) 954–965; *Lycodes pallidus* spp. complex (*paamiuti* n. sp. & 4 other spp.) (n. sp., redescribe other spp., phyl. anal., lat. line & morph. charcs.) 972–996; *Paramesotriton* (4 of the 6 spp.), *Pachytriton* (1 of the 2 spp.), *Cynops* (2 of the 7 spp.) (phyl. anal., mtDNA data, all genera in one clade, *Cynops* polyphyl., morph. charcs. of 14 spp. to clarify rels.) 997–1009; *Aspidoras taurus* n. sp. (n. sp., phyl. notes, largest sp. in genus) 1010–1016; *Eptatretus wayuu* n. sp., *Quadratus ancon* n. sp. (n. spp. compare to rels.) 1026–1033; *Gerres erythrouros* spp. complex (*phaiya* n. sp., *erythrouros*) (n. sp., rediagn. *G. erythrouros*, describe spp. complex, discuss confusion w/ *G. poietti* & *G. poietti*) 1043–1049; *Moenkhausia* (*diktyota* n. sp., *oligolepis*, *sanctaeofilomenae*, *pyrophthalma*) (n. sp. compare to similar congeners) 1058–1063; *Chromogobius* (*britoi* n. sp., *zebratus*, *quadricellatus*) (n. sp. compare to congeners, key to spp., discuss cheek myology as trait in phyl. anal. of gobies) 1073–1080; *Poecilopsetta dorsalis* n. sp. (n. sp. compare to the 6 other Pacific *O.* congeners) 1081–1086; *Polydactylus longipennis* n. sp. (n. sp. compare to 4 closely rel. congeners) 1087–1092; *Batrachuperus* (the 5 spp. in China) (phyl. anal., mtDNA data, some spp. polyphyl.) 1100–1107; *Barbus gananensis* (phyl. anal. of 3 morphotypes, mtDNA data, show one morph. is undescr. sp.) 1123–1129; *Sanzinia madagascariensis*, *Acanthopis madagascariensis*, *Boa constrictor* (phyl. anal., mtDNA data, resurr. S. & A., still closer to *Boa* than to pythons) 1151–1154.
- TASTE**, *Anolis carolinensis* (taste discrim. not due to vomeronasal organ stim.) 490–498; *Otopharynx pachycheilus* n. sp. (hypertrophied lips have numerous probable taste buds) 705–717.
- TEMPERATURE**, *Chelydra serpentina* (incub. temp. rel. to hatching success & hatching deform.) 129–135; *Podarcis* (*melisellensis*, *muralis*) (thermoreg. in autumn) 178–186; *Anolis nebulosus* (aff. perch height) 187–193; *Crotalus viridis concolor* (rel. to reprod. seas.) 229–234; *Gekko gekko* (aff. calling) 248–253; *Thamnophis sirtalis* (abnormal thermoreg. in captive gravid females lowers offspring viability.) 365–371; *Anolis nitens tandai* (body temp., thermoreg.) 401–412; *Eleutherodactylus cooki* (reprod. seas. rel. to slight temp. chngs. in caves) 542–547; *Niveoscincus ocellatus* (geogr. var. in hab. temp. aff. age & size at matur.) 646–655; *Natator depressus* (egg dev. & hatching. condit. rel. to egg incub. temp. & hydr.) 668–682; *Lamna ditropis* (body temps. well above ambient) 794–796; *Clinocottus analis*, *Girella nigricans* (diel chngs. in hab. use in tidepools rel. to temper. & pred. avoid.) 835–841; *Rana sylvatica* (eff. of temp. on leech-infected tadpl. growth & surv.) 907–915; *Chelydra serpentina* (juv. righting response duration aff. by body temp.) 1050–1057.
- TOXICITY**, *Rana spinocephala* (gen. var. in response to insecticide toxic.) 7–13.
- TRUSS ANALYSIS**, *Gila* (*cypha*, *robusta*) (geom. morphometrics. advantage over truss anal.: better visualization aids spp. ident. for conserv. mgmnt.) 389–400; *Hybognathus placitus* (used to disting. sex. shape dimorph.) 563–565.
- VISION**, *Caretta caretta* (histol. of retina rel. to function, ecol. benefits) 718–725.
- WATER BALANCE**, *Chelydra serpentina* (juvs. sensit. to dehyd. during land migr.) 521–525; *Natator depressus* (egg dev. & hatching. condit. rel. to egg incub. temp. & hydr.) 668–682.